

UNITED STATES DEPARTMENT OF COMMERCE

W. AVERELL HARRIMAN, *Secretary*

WEATHER BUREAU

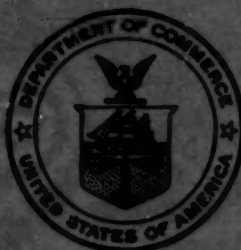
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MONTHLY WEATHER REVIEW

NOVEMBER 1946

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METEOROLOGICAL AND CLIMATOLOGICAL DATA FOR NOVEMBER 1946

AEROLOGICAL OBSERVATIONS

[For description of change in Table 1 and charts, see REVIEW, January 1946, p. 6]

TABLE 1.—Mean dynamic height (geopotential) in units of 0.98 dynamic meters, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during November 1946

STATIONS AND MEAN SURFACE PRESSURES

Standard pressure surface (mb.)	Albany, N. Y. (1,008.5 mb.)				Albuquerque, N. Mex. (838.0 mb.)				Apalachicola, Fla. (1,018.2 mb.)				Atlanta, Ga. (985.6 mb.)				Auburn, Calif. (958.2 mb.)				Big Spring, Tex. (928.6 mb.)				Bismarck, N. Dak. (957.0 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity				
Surface.....	27	86	5.1	72	30	1,620	6.3	53	30	5	19.2	86	30	300	13.2	76	30	501	8.9	60	30	774	12.0	54	29	505	-2.9	74
1,000.....	27	154	8.0	69	30	144	(*)	---	30	160	19.3	83	30	177	(*)	---	30	144	(*)	---	30	143	(*)	---	29	153	(*)	---
950.....	27	579	3.6	71	30	583	(*)	---	30	604	17.5	81	30	613	14.0	67	30	575	10.2	55	30	580	(*)	---	29	567	(*)	---
900.....	27	1,010	1.5	68	30	1,033	(*)	---	30	1,062	15.3	75	30	1,066	12.9	62	30	1,021	8.3	51	30	1,036	12.4	49	29	992	-2.7	66
850.....	27	1,470	-4	61	30	1,503	(*)	---	30	1,545	12.9	67	30	1,546	11.4	54	30	1,490	5.6	48	29	1,514	10.9	48	29	1,446	-2.1	60
800.....	27	1,955	-1.1	56	30	2,000	5.1	51	30	2,053	10.9	56	30	2,050	9.2	49	30	1,984	3.1	47	29	2,018	9.2	45	29	1,927	-3.0	54
750.....	27	2,473	-3.2	53	30	2,530	2.0	54	30	2,596	8.6	45	30	2,588	7.1	41	30	2,509	4	48	29	2,551	6.8	44	29	2,441	-5.0	54
700.....	27	3,011	-5.6	55	30	3,078	-1.3	54	30	3,156	6.1	38	30	3,146	4.4	39	30	3,054	-2.6	49	29	3,115	4.0	30	28	2,976	-7.8	56
650.....	27	3,596	-8.0	61	30	3,667	-4.8	48	30	3,764	2.8	---	30	3,747	1.2	---	29	3,642	-5.9	54	29	3,714	2	34	26	3,552	-10.5	61
600.....	26	4,207	-11.0	46	30	4,290	-8.2	45	30	4,402	-6	---	30	4,385	-2.4	---	29	4,261	-9.3	49	29	4,349	-4.3	---	27	4,163	-13.8	64
550.....	25	4,870	-14.8	50	30	4,962	-12.2	42	30	5,095	-4.8	---	30	5,068	-6.3	---	29	4,929	-13.4	48	29	5,028	-8.5	---	27	4,821	-17.7	63
500.....	25	5,581	-19.6	---	30	5,683	-17.3	42	30	5,833	-9.6	---	30	5,808	-11.3	---	29	5,647	-18.5	48	27	5,764	-13.3	---	27	5,527	-22.2	---
450.....	25	6,362	-24.7	---	30	6,469	-23.1	---	29	6,644	-15.0	---	30	6,612	-16.9	---	29	6,429	-24.0	---	26	6,568	-18.6	---	27	6,302	-27.1	---
400.....	25	7,204	-30.4	---	30	7,316	-29.2	---	29	7,517	-21.3	---	29	7,481	-23.4	---	29	7,273	-30.0	---	26	7,432	-24.6	---	25	7,150	-32.1	---
350.....	25	8,140	-37.0	---	30	8,257	-35.5	---	29	8,457	-28.6	---	29	8,443	-30.7	---	29	8,210	-36.7	---	25	8,389	-31.6	---	24	8,077	-38.9	---
300.....	25	9,188	-44.5	---	30	9,314	-42.3	---	29	9,571	-37.2	---	29	9,518	-38.8	---	29	9,261	-43.8	---	24	9,457	-39.5	---	23	9,119	-46.1	---
250.....	25	10,387	-52.3	---	27	10,536	-49.1	---	29	10,803	-47.0	---	29	10,743	-48.4	---	29	10,465	-51.1	---	23	10,684	-47.4	---	19	10,316	-52.7	---
200.....	20	11,821	-58.8	---	21	11,987	-54.7	---	28	12,256	-57.4	---	27	12,181	-58.3	---	26	11,911	-57.1	---	19	12,129	-54.9	---	12	11,732	-58.0	---
175.....	17	12,650	-60.1	---	14	12,832	-56.8	---	25	13,067	-63.1	---	21	13,026	-62.3	---	22	12,738	-58.1	---	8	12,976	-57.9	---	8	12,588	-58.9	---
150.....	11	13,624	-60.8	---	5	13,842	-59.2	---	23	14,024	-67.4	---	17	13,973	-65.4	---	15	13,715	-58.8	---	---	---	---	---	6	13,561	-56.6	---
125.....	6	14,746	-59.7	---	---	---	---	---	17	15,135	-71.2	---	8	15,047	-68.0	---	---	---	---	---	---	---	---	---	---	---	---	---
100.....	---	---	---	---	---	---	---	---	7	16,415	-72.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	

Standard pressure surface (mb.)	Boise, Idaho (918.4 mb.)				Brownsville, Tex. (1,015.1 mb.)				Buffalo, N. Y. (962.4 mb.)				Burrwood, La. (1,017.1 mb.)				Caribou, Maine (962.7 mb.)				Charleston, S. C. (1,019.0 mb.)				Ciudad Victoria, Mexico (976.3 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity				
Surface.....	24	898	3.0	74	30	6	20.2	81	30	221	0.6	73	30	2	20.5	86	30	191	-1.2	83	39	14	15.1	87	29	335	20.3	73
1,000.....	24	172	(*)	---	30	135	19.9	80	30	156	(*)	---	30	148	19.8	85	30	131	(*)	---	30	174	16.7	80	29	125	(*)	---
950.....	24	597	(*)	---	30	580	17.8	79	30	582	5.5	70	30	595	17.6	81	30	543	-2.8	82	30	613	15.2	77	29	570	19.1	72
900.....	24	1,032	4.2	68	30	1,039	16.2	76	30	1,019	3.3	72	30	1,052	15.9	71	30	968	-4.6	83	30	1,068	13.4	68	28	1,033	16.5	73
850.....	24	1,496	2.7	59	30	1,525	15.0	61	30	1,481	9	69	30	1,537	13.8	60	30	1,418	-5.4	78	30	1,549	11.7	63	28	1,518	14.3	72
800.....	24	1,984	-1	63	30	2,038	13.5	55	30	1,966	-8	61	30	2,048	11.7	55	30	1,893	-6.8	71	30	2,054	9.7	55	27	2,031	12.6	60
750.....	24	2,505	-2.9	61	30	2,583	11.1	51	30	2,489	-2.1	54	30	2,591	9.5	46	30	2,400	-8.4	67	30	2,590	7.3	55	26	2,571	10.3	67
700.....	24	3,043	-5.5	65	30	3,154	8.2	47	30	3,028	-4.3	48	30	3,156	6.5	41	29	2,930	-10.5	62	30	3,153	4.4	---	26	3,143	7.5	60
650.....	24	3,626	-8.8	69	29	3,764	4.9	44	29	3,617	-7.0	51	30	3,765	3.4	40	29	3,502	-12.4	59	30	3,754	1.2	---	23	3,745	4.1	59
600.....	23	4,234	-12.3	67	28	4,412	1.0	43	29	4,233	-9.9	46	30	4,407	-4	37	29	4,105	-15.8	56	30	4,394	-2.3	---	21	4,393	3	48
550.....	23	4,896	-16.2	59	28	5,105	-3.5	---	29	4,905	-13.5	---	30	5,099	-4.5	---	29	4,759	-19.3	57	30	5,076	-6.4	---	19	5,084	-3.5	---
500.....	23	5,605	-21.0	---	26	5,856	-7.9	---	29	5,617	-17.9	---	30	5,843	-9.1	---	28	5,468	-22.9	---	30	5,818	-11.2	---	19	5,834	-8.0	---
450.....	23	6,384	-26.3	---	26	6,674	-12.7	---	28	6,409	-23.0	---	29	6,558	-14.5	---	28	6,243	-28.1	---	29	6,521	-16.9	---	17	6,555	-12.6	---
400.....	23	7,218	-32.3	---	26	7,557	-18.6	---	25	7,262	-29.0	---	28	7,537	-20.2	---	28	7,070	-33.5	---	29	7,492	-23.0	---	15	7,544	-18.7	---
350.....	23	8,146	-39.0	---	26	8,537	-25.7	---	24	8,201	-36.0	---	28	8,512	-27.7	---	28	7,995	-39.5	---	29	8,457	-30.3	---	11	8,532	-26.2	---
300.....	22	9,175	-47.2	---	25	9,634	-34.1	---	22	9,245	-44.1	---	28	9,602	-35.0	---	25	9,024	-45.8	---	29	9,535	-38.4	---	10	9,625	-34.8	---
250.....	22	10,359	-54.8	---	25	10,884	-43.5	---	17	10,464	-51.8	---	28	10,843	-45.3	---	25	10,224	-50.8	---	29	10,763	-45.0	---	10	10,874	-45.0	---
200.....	16	11,780	-58.8	---	24	12,351	-53.7	---	12	11,890	-58.4	---	27	12,299	-55.7	---	20	11,681	-54.5	---	29	12,200	-58.2	---	10	12,324	-57.2	---
175.....	10	12,625	-57.8	---	22	13,208	-58.5	---	8	12,776	-60.8	---	14	13,150	-61.4	---	18	12,357	-55.9	---	28	13,082	-62.6	---	10	13,157	-63.3	---
150.....	6	13,611	-58.0	---	17	14,164	-63.0	---	7	13,745	-62.6	---	7	14,094	-65.5	---	13	13,527	-55.2	---	23	13,981	-65.9	---	10	14,092	-68.2	---
125.....	---	---	---	---	5	15,247	-67.2	---	---	---	---	---	5	14,661	-64.4	---	19	15,078	-68.6	---	---	---	---	---	---	---	---	
100.....	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	7	16,572	-69.5	---	---	---	---	---	---	---	---	

See footnotes at end of table.

TABLE 1.—Mean dynamic height (geopotential) in units of 0.98 dynamic meters, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during November 1946—Continued

	Columbia, Mo. (900.7 mb.)				Dodge City, Kans. (925.6 mb.)				El Paso, Tex. (882.6 mb.)				Ely, Nev. (808.7 mb.)				Ft. Worth, Tex. (993.2 mb.)				Glasgow, Mont. (940.3 mb.)				Grand Junction, Colo. (853.6 mb.)			
Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface.....	30	239	7.2	72	30	787	4.2	78	30	1,195	10.9	38	30	1,906	-1.9	80	29	211	13.1	67	30	648	-4.5	75	30	1,474	3.0	65
1,000.....	30	160	(*)	---	30	148	(*)	---	30	134	(*)	---	30	178	(*)	---	29	153	(*)	---	30	157	(*)	---	30	169	(*)	---
950.....	30	591	7.0	67	30	574	(*)	---	30	578	(*)	---	30	605	(*)	---	29	591	12.9	58	30	567	(*)	---	30	602	(*)	---
900.....	30	1,028	6.4	62	30	1,015	5.7	68	30	1,035	(*)	---	30	1,046	(*)	---	29	1,038	11.9	51	30	994	-2.9	71	30	1,048	(*)	---
850.....	30	1,497	6.2	54	30	1,483	5.5	59	30	1,509	11.1	38	30	1,507	(*)	---	29	1,516	10.8	45	30	1,447	-3.0	67	30	1,509	(*)	---
800.....	30	1,992	4.6	53	30	1,978	5.2	53	30	2,012	7.9	39	30	1,994	0	71	29	2,020	9.1	44	30	1,925	-4.6	66	30	1,999	1.5	59
750.....	30	2,524	2.9	50	30	2,500	3.1	47	30	2,547	4.7	37	30	2,516	-1.5	60	29	2,556	6.8	40	30	2,437	-6.1	63	30	2,523	-1.1	63
700.....	30	3,073	3	45	30	3,060	6	40	30	3,100	1.9	36	30	3,058	-4.2	58	29	3,117	4.0	38	30	2,970	-8.5	63	30	3,054	-4.5	67
650.....	30	3,668	-2.4	44	30	3,654	-2.8	39	30	3,696	-1.9	33	30	3,643	-7.0	58	28	3,720	5	35	30	3,544	-11.3	62	30	3,646	-7.6	60
600.....	30	4,296	-5.8	38	30	4,281	-6.8	36	30	4,325	-5.6	30	30	4,259	-10.8	57	28	4,356	-3.4	34	30	4,152	-14.7	60	30	4,262	-11.1	58
550.....	30	4,973	-10.2	39	30	4,954	-11.2	39	30	5,001	-10.1	---	30	4,928	-14.5	52	27	5,040	-7.8	---	30	4,805	-18.7	50	30	4,926	-15.1	53
500.....	30	5,700	-14.9	40	30	5,679	-16.4	39	30	5,730	-14.9	---	30	5,639	-19.1	55	27	5,773	-12.6	---	30	5,509	-23.5	---	30	5,640	-19.7	50
450.....	30	6,501	-20.4	43	30	6,469	-22.0	---	30	6,522	-20.6	---	30	6,424	-24.3	---	27	6,574	-18.2	---	30	6,276	-28.6	---	30	6,418	-25.1	---
400.....	30	7,351	-26.6	---	30	7,320	-28.3	---	29	7,376	-26.7	---	30	7,293	-30.6	---	26	7,442	-24.6	---	27	7,115	-33.8	---	29	7,262	-31.0	---
350.....	29	8,302	-33.7	---	30	8,262	-35.3	---	29	8,320	-33.5	---	30	8,198	-37.7	---	26	8,400	-31.7	---	24	8,037	-40.2	---	29	8,195	-38.2	---
300.....	28	9,367	-41.5	---	29	9,328	-42.5	---	29	9,391	-40.8	---	29	9,245	-45.2	---	25	9,473	-39.5	---	21	9,067	-47.4	---	27	9,241	-45.5	---
250.....	27	10,581	-50.3	---	28	10,536	-50.8	---	29	10,610	-48.4	---	29	10,444	-51.4	---	22	10,700	-47.9	---	16	10,295	-54.4	---	26	10,437	-51.3	---
200.....	20	12,012	-58.1	---	27	11,958	-57.4	---	29	12,053	-56.3	---	28	11,871	-55.5	---	15	12,148	-57.4	---	6	11,660	-54.3	---	22	11,868	-55.5	---
175.....	14	12,862	-60.5	---	25	12,790	-60.0	---	25	12,891	-59.9	---	24	12,713	-57.6	---	8	12,987	-63.8	---	---	---	---	---	17	12,726	-56.3	---
150.....	---	---	---	---	20	13,750	-60.2	---	17	13,848	-61.7	---	18	13,650	-57.8	---	---	---	---	---	---	---	---	---	7	13,712	-58.0	---
125.....	---	---	---	---	10	14,862	-60.1	---	7	14,975	-65.4	---	10	14,787	-59.3	---	---	---	---	---	---	---	---	---	---	---	---	---

	Great Falls, Mont. (886.3 mb.)				Greensboro, N. C. (989.5 mb.)				Hatteras, N. C. (1,020.6 mb.)				Havana, Cuba ¹ (..... mb.)				Honolulu, T. H. (1,013.9 mb.)				Huntington, W. Va. (1,000.7 mb.)				International Falls, Minn. (975.1 mb.)			
Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface.....	30	1,128	-2.3	70	30	273	9.9	79	30	3	16.3	83	---	---	---	---	30	3	24.9	68	30	172	7.5	80	29	359	-4.7	80
1,000.....	30	157	(*)	---	30	185	(*)	---	30	177	16.2	77	---	---	---	---	30	124	23.0	60	30	177	(*)	---	29	159	(*)	---
950.....	30	576	(*)	---	30	615	11.7	67	30	615	13.9	73	---	---	---	---	30	576	19.7	74	30	605	9.4	64	29	568	-4.6	78
900.....	30	1,008	(*)	---	30	1,065	9.4	67	30	1,066	11.6	64	---	---	---	---	30	1,035	16.4	70	30	1,051	7.8	63	29	988	-5.6	77
850.....	30	1,461	-1.1	61	30	1,538	7.8	62	30	1,543	10.2	59	---	---	---	---	30	1,521	13.8	71	30	1,521	6.2	51	29	1,436	-5.9	70
800.....	30	1,943	-3.1	59	30	2,037	6.6	51	30	2,047	8.8	40	---	---	---	---	30	2,031	11.7	62	30	2,016	4.8	44	29	1,911	-6.1	66
750.....	30	2,458	-4.6	59	30	2,573	4.9	42	30	2,585	6.5	39	---	---	---	---	30	2,576	10.0	44	30	2,544	3.0	41	29	2,421	-7.8	62
700.....	30	2,963	-7.0	60	30	3,129	2.4	40	30	3,142	4.1	30	---	---	---	---	30	3,141	7.3	34	30	3,097	7.8	38	29	2,949	-10.1	63
650.....	30	3,574	-10.3	60	30	3,724	-7.7	37	30	3,743	9	30	---	---	---	---	30	3,748	4.4	25	30	3,691	-1.9	---	29	3,525	-12.3	60
600.....	30	4,180	-14.0	60	30	4,357	-4.1	36	30	4,379	-2.9	---	---	---	---	---	30	4,394	8	---	30	4,323	-5.3	---	29	4,127	-15.3	56
550.....	30	4,837	-18.3	60	30	5,036	-8.7	36	29	5,065	-7.0	---	---	---	---	---	29	5,084	-3.8	---	28	5,005	-9.4	---	28	4,774	-19.1	58
500.....	30	5,540	-23.0	---	30	5,769	-13.3	---	28	5,803	-11.4	---	---	---	---	---	29	5,830	-8.8	---	28	5,733	-14.2	---	27	5,477	-23.1	---
450.....	30	6,309	-28.3	---	30	6,568	-18.9	---	28	6,606	-16.8	---	---	---	---	---	29	6,646	-14.8	---	28	6,526	-19.5	---	27	6,250	-28.3	---
400.....	30	7,138	-34.0	---	29	7,427	-25.6	---	28	7,477	-22.8	---	---	---	---	---	29	7,518	-21.4	---	28	7,389	-25.6	---	26	7,081	-34.0	---
350.....	30	8,061	-40.2	---	29	8,380	-32.9	---	27	8,445	-30.0	---	---	---	---	---	29	8,487	-28.8	---	28	8,343	-33.0	---	25	7,997	-41.0	---
300.....	30	9,066	-47.3	---	29	9,446	-41.3	---	26	9,524	-38.3	---	---	---	---	---	27	9,576	-37.2	---	26	9,399	-41.2	---	20	9,074	-47.8	---
250.....	25	10,306	-54.1	---	29	10,658	-51.2	---	25	10,745	-47.7	---	---	---	---	---	27	10,810	-46.4	---	25	10,613	-50.1	---	16	10,277	-54.6	---
200.....	15	11,717	-58.2	---	26	12,076	-60.6	---	21	12,176	-57.8	---	---	---	---	---	19	12,276	-55.5	---	16	12,050	-58.9	---	10	11,757	-55.7	---
175.....	7	12,569	-56.7	---	24	12,904	-64.2	---	19	13,009	-66.5	---	---	---	---	---	5	13,123	-59.9	---	11	12,908	-61.5	---	7	12,589	-64.7	---
150.....	---	---	---	---	17	13,862	-65.3	---	13	13,958	-64.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
125.....	---	---	---	---	12	14,954	-66.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	

	Joliet, Ill. (998.0 mb.)				Lake Charles, La. (1,017.3 mb.)				Lander, Wyo. (828.1 mb.)				Las Vegas, Nev. (950.7 mb.)				Little Rock, Ark. (1,010.0 mb.)				Mazatlan, Mexico (1,010.1 mb.)				Medford, Oreg. (970.1 mb.)			
Standard pressure surface (mb.)	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface.....	30	178	4.4	82	29	5	16.4	89	30	1,696	-1.8	68	29	574	10.6	55	30	79	11.2	83	30	14	23.8	74	30	401	7.0	77
1,000.....	30	161	(*)	---	29	151	17.0	82	30	160	(*)	---	29	148	(*)	---	30	162	11.8	76	30	102	23.1	71	30	150	(*)	---
950.....	30	581	4.3	71	29	597</																						

TABLE 1.—Mean dynamic height (geopotential) in units of 0.98 dynamic meters, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during November 1946—Continued

Standard pressure surface (mb.)	Merida, Mexico (1,010.9 mb.)				Miami, Fla. (1,016.6 mb.)				Nantucket, Mass. (1,017.5 mb.)				Nashville, Tenn. (999.1 mb.)				North Platte, Nebr. (918.3 mb.)				Oakland, Calif. (1,017.1 mb.)				Ogden, Utah (866.0 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface.....	30	27	26.7	78	30	4	22.6	87	30	14	8.9	78	30	180	11.9	72	30	849	7	81	30	2	11.4	71	30	1,355	2.6	70
1,000.....	30	123	25.0	77	30	145	22.9	83	30	156	9.0	74	30	171	11.9	72	30	154	7	81	30	144	11.5	68	30	1,170	2.6	70
950.....	30	576	22.4	75	30	596	20.0	83	30	583	7.2	69	30	604	11.6	67	30	576	7	81	30	575	9.8	61	30	600	2.6	70
900.....	30	1,042	19.3	73	30	1,059	17.1	80	30	1,025	5.4	57	30	1,033	10.1	65	30	1,011	3.1	71	30	1,018	7.8	54	30	1,042	3.0	61
850.....	30	1,533	16.4	70	30	1,545	13.9	79	30	1,490	3.9	47	30	1,528	9.0	53	30	1,475	3.5	56	30	1,488	5.0	46	30	1,506	3.0	61
800.....	30	2,046	13.1	75	30	2,055	11.5	71	30	1,982	2.4	40	30	2,028	7.2	47	30	1,967	2.6	46	30	1,982	3.4	48	30	1,996	1.0	59
750.....	30	2,591	10.6	60	30	2,598	9.0	58	30	2,506	-1.1	43	30	2,562	8.2	39	30	2,495	1.1	42	30	2,508	1.0	44	30	2,516	-2.5	62
700.....	30	3,160	8.2	49	30	3,161	6.3	45	30	3,051	-2.6	40	30	3,118	2.7	39	30	3,036	-3.1	42	30	3,055	-1.7	42	30	3,059	-5.8	65
650.....	29	3,771	5.3	41	29	3,769	3.2	39	30	3,608	-4.9	36	29	3,715	-2.2	39	30	3,626	-6.4	43	30	3,643	-4.5	39	30	3,636	-9.0	62
600.....	29	4,419	1.3	43	29	4,410	-1.3	35	30	4,262	-7.8	30	29	4,352	-3.7	39	30	4,241	-9.8	43	30	4,268	-8.3	44	30	4,250	-12.3	60
550.....	27	5,111	-2.6	38	29	5,102	-4.5	30	30	4,935	-11.7	27	29	5,030	-7.9	39	30	4,914	-13.8	48	30	4,940	-12.3	45	30	4,910	-16.2	64
500.....	27	5,863	-7.3	34	29	5,845	-9.3	29	30	5,659	-16.2	28	28	5,767	-12.6	39	30	5,636	-18.4	48	27	5,671	-16.7	46	29	5,620	-20.7	62
450.....	27	6,680	-12.5	29	29	6,563	-14.7	27	27	6,444	-21.6	28	28	6,568	-18.1	30	30	6,413	-24.1	30	27	6,458	-22.2	29	28	6,394	-25.9	69
400.....	27	7,567	-18.6	22	29	7,534	-20.7	27	27	7,299	-27.6	28	28	7,434	-24.3	30	30	7,251	-30.7	27	27	7,312	-28.2	28	27	7,229	-32.2	70
350.....	27	8,547	-26.5	18	28	8,506	-28.2	27	27	8,246	-34.3	27	27	8,392	-31.6	30	30	8,184	-38.0	27	28	8,257	-34.2	26	26	8,171	-38.9	71
300.....	27	9,640	-35.1	13	28	9,592	-36.6	27	27	9,306	-42.1	27	27	9,463	-39.6	30	30	9,228	-45.6	26	27	9,318	-40.9	25	25	9,206	-46.3	72
250.....	27	10,883	-45.5	8	28	10,829	-46.2	26	26	10,509	-50.4	24	24	10,680	-48.6	30	29	10,433	-52.3	25	25	10,541	-47.5	24	24	10,393	-52.7	73
200.....	27	12,331	-57.3	3	28	12,280	-56.5	24	24	11,960	-58.5	21	21	12,111	-57.8	30	29	11,856	-57.4	21	21	12,004	-53.6	23	23	11,807	-56.9	74
175.....	24	13,161	-63.5	2	24	13,117	-62.0	21	21	12,795	-60.0	14	14	12,959	-60.7	30	25	12,689	-58.5	11	11	12,845	-54.0	21	21	12,647	-56.6	75
150.....	19	14,096	-69.2	1	19	14,069	-68.6	13	13	13,775	-61.6	9	9	13,925	-63.2	30	14	13,661	-59.4	8	8	13,851	-55.1	18	18	13,621	-57.1	76
125.....	11	15,160	-73.2	1	11	15,163	-70.3	8	8	14,891	-61.9	7	7	15,025	-63.2	30	7	14,816	-59.0	7	7	15,000	-59.0	14	14	14,765	-57.1	77

Standard pressure surface (mb.)	Oklahoma City, Okla. (972.0 mb.)				Omaha, Nebr. (981.6 mb.)				Phoenix, Ariz. (976.1 mb.)				Pittsburgh, Pa. (975.3 mb.)				Portland, Maine (1,015.6 mb.)				Rapid City, S. Dak. (902.7 mb.)				St. Paul, Minn. (991.1 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface.....	30	391	9.1	76	30	308	4.5	73	30	339	11.3	64	30	382	7.5	70	30	20	4.4	75	30	980	-5	72	30	225	7	77
1,000.....	30	152	9.1	76	30	156	4.6	73	30	133	11.3	64	30	174	7.5	70	30	144	5.1	72	30	147	-5	72	30	151	7	77
950.....	30	585	9.9	67	30	580	4.6	67	30	573	15.7	44	30	605	4.6	66	30	565	3.7	69	30	569	-5	69	30	567	-1	73
900.....	30	1,029	9.6	59	30	1,014	3.8	61	30	1,025	13.0	42	30	1,042	5.8	63	30	1,000	1.9	67	30	1,003	-6	68	30	996	-8	65
850.....	30	1,504	8.9	54	30	1,478	3.6	51	30	1,502	9.6	45	30	1,509	4.1	56	30	1,460	1.7	61	30	1,462	-6	58	30	1,452	-1.4	58
800.....	30	2,005	7.3	44	30	1,970	2.4	44	30	2,002	6.1	46	30	2,000	2.6	47	30	1,946	-1.0	56	30	1,948	-5	50	30	1,934	-2.3	53
750.....	30	2,541	5.3	44	30	2,493	3	42	30	2,536	2.8	48	30	2,529	9	42	30	2,463	-3.1	54	30	2,466	-2.6	52	30	2,452	-4.2	53
700.....	30	3,095	2.7	42	30	3,039	-2.0	40	30	3,083	-3.3	42	30	3,073	-1.1	42	30	3,003	-5.4	51	30	3,006	-5.4	54	30	2,988	-6.1	46
650.....	29	3,694	-6	35	30	3,631	-5.0	36	30	3,679	-3.8	38	30	3,666	-4.0	44	30	3,587	-8.1	52	30	3,589	-8.7	54	30	3,571	-8.6	45
600.....	29	4,325	-4.6	32	30	4,250	-8.5	32	29	4,298	-7.8	30	30	4,289	-7.3	46	30	4,200	-11.2	54	30	4,200	-12.0	55	30	4,183	-11.6	42
550.....	29	5,008	-9.2	22	30	4,922	-12.5	21	28	4,970	-12.1	30	30	4,965	-11.5	45	30	4,865	-14.7	50	28	4,871	-15.2	46	30	4,848	-15.4	45
500.....	28	5,731	-14.3	17	30	5,642	-17.4	17	27	5,688	-17.4	20	30	5,686	-16.0	30	30	5,579	-19.3	56	26	5,583	-19.7	30	30	5,558	-20.2	49
450.....	28	6,528	-19.6	12	30	6,427	-22.5	12	26	6,482	-23.1	30	30	6,477	-21.1	30	30	6,362	-24.4	26	26	6,361	-25.2	30	30	6,336	-25.9	50
400.....	28	7,387	-25.8	8	30	7,276	-29.1	8	26	7,320	-29.2	30	30	7,332	-27.3	30	30	7,204	-29.8	24	24	7,198	-31.4	30	30	7,173	-32.0	51
350.....	28	8,341	-32.6	3	30	8,217	-36.0	3	25	8,258	-35.5	30	30	8,270	-34.2	30	30	8,143	-36.3	24	24	8,129	-38.3	30	30	8,102	-38.9	52
300.....	28	9,410	-40.0	1	29	9,279	-43.4	1	23	9,317	-41.5	30	30	9,340	-41.9	30	29	9,197	-43.6	19	19	9,167	-45.7	30	30	9,144	-45.9	53
250.....	27	10,629	-48.7	1	28	10,483	-50.9	1	21	10,541	-48.0	30	30	10,550	-50.8	30	29	10,401	-51.6	15	15	10,381	-52.0	30	30	10,338	-52.8	54
200.....	25	12,074	-56.3	1	25	11,908	-57.2	1	19	11,980	-53.5	30	25	11,969	-60.1	30	29	11,825	-58.2	9	9	11,829	-57.8	26	26	11,766	-58.3	55
175.....	19	12,917	-60.0	1	21	12,741	-58.2	1	16	12,846	-57.1	30	20	12,788	-62.5	30	26	12,653	-59.3	5	5	12,645	-55.7	24	24	12,591	-60.2	56
150.....	14	13,877	-62.2	1	7	13,672	-57.6	1	13	13,815	-60.9	30	13	13,673	-63.0	30	14	13,681	-59.1	14	14	13,681	-59.1	17	17	13,569	-60.0	57
125.....	5	14,993	-67.5	1	7	14,993	-67.5	1	9	14,928	-63.2	30	5	14,832	-61.2	30	10	14,841	-60.0	10	10	14,841	-60.0	11	11	14,703	-58.9	58

Standard pressure surface (mb.)	San Antonio, Tex. (989.0 mb.)				San Juan, P. R. (1,012.1 mb.)				Santa Maria, Calif. (1,008.4 mb.)				Sault Ste. Marie, Mich. (988.4 mb.)				Spokane, Wash. (946.5 mb.)				Swan Island,			
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TABLE 1.—Mean dynamic height (geopotential) in units of 0.98 dynamic meters, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during November 1946—Continued

Standard pressure surface (mb.)	Tampa, Fla. (1,016.8 mb.)			Tatoosh Island, Wash. (1,011.8 mb.)			Toledo, Ohio (996.5 mb.)			Washington, D. C. (1,018.8 mb.)		
	Number of observations	Height	Temperature	Number of observations	Height	Temperature	Number of observations	Height	Temperature	Number of observations	Height	Temperature
Surface	26	9	21.1	86	30	31	84	30	191	81	25	10.9
1,000	26	153	21.1	84	30	127	30	160	81	30	180	10.6
950	26	598	18.8	81	30	550	75	30	583	72	30	608
900	26	1,060	16.0	81	30	984	74	30	1,024	63	30	1,053
850	26	1,545	13.1	78	30	1,443	71	30	1,490	51	30	1,522
800	26	2,053	10.9	65	30	1,925	69	30	1,981	50	30	2,018
750	26	2,591	8.3	56	30	2,442	60	30	2,506	40	30	2,548
700	26	3,156	5.8	46	30	2,973	56	30	3,051	33	30	3,099
650	26	3,762	2.9	30	3,553	45	32	29	3,640	26	30	3,695
600	26	4,404	-0.6	30	4,156	30	50	29	4,265	19	30	4,321
550	26	5,093	-4.6	30	4,813	18.2	48	29	4,936	12.2	30	4,999
500	26	5,837	-9.5	30	5,516	-22.8	30	29	5,659	-16.8	30	5,720
450	26	6,645	-15.0	30	6,286	-27.7	30	29	6,445	-22.1	30	6,521
400	26	7,522	-21.1	30	7,119	-33.0	30	29	7,299	-28.8	30	7,379
350	25	8,491	-28.3	26	8,070	-38.2	28	28	8,242	-34.8	30	8,329
300	25	9,577	-35.7	26	9,116	-44.5	28	28	9,300	-42.7	30	9,389
250	25	10,814	-46.1	22	10,317	-50.4	24	24	10,506	-51.3	28	10,605
200	24	12,252	-56.8	7	11,754	-53.5	21	21	11,924	-59.3	23	12,041
175	23	13,093	-62.1	—	—	—	18	18	12,771	-60.5	20	12,884
150	19	14,043	-65.7	—	—	—	15	15	13,755	-61.4	17	13,847
125	12	15,165	-70.3	—	—	—	8	8	14,870	-62.5	8	14,924

¹ Data not yet received.

(*) Temperature and relative humidity data for this level are not available or are available only for certain days. See note entitled "Change in Summarization of Radiosonde Data," p. 6, in the January 1946 issue of the MONTHLY WEATHER REVIEW.

NOTE.—All observations scheduled between 0300 and 0500, G. C. T. except at Ciudad Victoria, Mazatlan, and Merida, where they are taken near 0200, G. C. T.

"Number of observations" refers to those of dynamic height only. (In a few cases temperature or humidity data may be missing for one or more standard pressure surfaces

of some observations.) Relative humidity data are not published for standard pressure surfaces having a corresponding mean temperature below -20° C.

All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the values occurring below the operating range of the humidity element. For explanation of the adjustment see article entitled "Curve Method for Obtaining Monthly Means of Relative Humidity," p. 241, MONTHLY WEATHER REVIEW, December 1944.

None of the means included in these tables are based on less than 15 observations at the surface or 5 observations at a standard pressure level.

LATE REPORT FOR HAVANA, CUBA

TABLE 1.—Mean dynamic height (geopotential) in units of 0.98 dynamic meters, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during October 1946

STATION AND MEAN SURFACE PRESSURES

Standard pressure surface (mb.)	Havana, Cuba (1,007.2 mb.)			Havana, Cuba (1,007.2 mb.)		
	Number of observations	Height	Temperature	Number of observations	Height	Temperature
Surface	28	50	23.9	28	5,859	-6.6
1,000	28	116	24.3	28	6,679	-12.0
950	28	567	21.6	28	7,567	-18.1
900	28	1,032	18.9	28	8,550	-25.6
850	28	1,521	16.0	27	9,646	-34.3
800	28	2,035	13.2	26	10,894	-44.6
750	28	2,582	11.6	23	12,354	-56.1
700	28	3,151	8.7	16	13,194	-62.7
650	28	3,764	5.3	12	14,116	-68.7
600	28	4,411	1.5	6	15,158	-72.6
550	28	5,108	-2.2	—	—	—

TABLE 2.—Free-air resultant winds based on pilot balloon observations made near 5 p. m., E. S. T. (2200 G. C. T.) during November 1946. Directions given in degrees from north (N=360°, E=90°, S=180°, W=270°). Velocities in meters per second

Altitude (meters) m. s. l.	Abilene, Tex. (534 m.)			Albuquerque, N. Mex. (1,630 m.)			Atlanta, Ga. (299 m.)			Billings, Mont. (1,095 m.)			Bismarck, N. Dak. (512 m.)			Boise, Idaho (868 m.)			Brownsville, Tex. (7 m.)			Buffalo, N. Y. (220 m.)			Burlington, Vt. (100 m.)			Charleston, S. C. (16 m.)			Cincinnati, Ohio (180 m.)			Denver, Colo. (1,637 m.)			El Paso, Tex. (1,198 m.)					
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity						
Surface	26	190	2.0	29	236	0.7	26	38	1.8	28	300	2.1	28	289	3.2	27	317	0.8	28	73	0.9	27	240	4.0	26	242	1.5	29	49	1.6	28	218	1.6	26	149	1.2	30	232	1.3			
500	26	208	3.1	29	221	1.6	26	49	1.6	28	300	2.1	28	289	3.2	27	317	0.8	28	73	0.9	27	240	4.0	26	242	1.5	29	49	1.6	28	218	1.6	26	149	1.2	30	232	1.3			
1,000	26	208	3.1	29	221	1.6	26	49	1.6	28	300	2.1	28	289	3.2	27	317	0.8	28	73	0.9	27	240	4.0	26	242	1.5	29	49	1.6	28	218	1.6	26	149	1.2	30	232	1.3			
1,500	26	232	4.1	29	221	1.6	26	89	2.0	28	263	5.0	27	298	4.6	27	321	7.7	23	263	4.6	26	247	10.2	25	252	7.6	23	223	1.6	26	225	5.8	28	211	3.4	30	243	1.8			
2,000	26	244	5.1	29	221	1.6	26	267	1.9	28	263	7.2	22	284	8.3	26	260	3.1	13	190	3.8	17	267	13.4	18	285	12.3	21	270	3.5	23	257	8.0	26	167	1.8	29	244	2.6			
2,500	25	251	7.8	28	242	3.4	19	295	3.2	26	268	9.7	20	286	9.0	24	251	4.3	10	246	1.3	15	259	14.7	13	289	18.5	19	262	5.0	19	266	9.0	26	215	1.4	28	241	5.0			
3,000	23	254	9.6	28	256	5.7	17	295	4.9	26	289	10.6	20	289	9.5	23	280	3.9	10	246	1.3	11	265	18.0	13	289	18.5	20	260	5.5	18	276	10.6	23	358	4.6	27	250	8.0			
4,000	23	256	11.2	28	267	9.6	15	284	8.1	19	287	10.9	20	284	12.5	15	313	2.4	10	246	1.3	11	265	18.0	13	289	18.5	19	294	7.7	10	252	9.6	23	373	9.0	27	254	11.7			
5,000	23	251	13.3	21	262	11.6	15	270	9.1	17	287	9.8	19	284	14.6	11	19	4.4	10	246	1.3	11	265	18.0	13	289	18.5	19	267	9.3	10	262	9.6	21	271	15.7	26	251	15.2			
6,000	22	253	15.5	20	261	14.9	14	273	11.5	15	321	8.5	17	278	16.0	11	19	4.4	10	246	1.3	11	265	18.0	13	289	18.5	16	270	9.4	10	262	9.6	21	266	17.4	24	255	14.2			
8,000	13	254	13.0	17	274	12.8	14	265	20.9	10	354	6.3	12	284	10.8	11	19	4.4	10	246	1.3	11	265	18.0	13	289	18.5	15	277	14.6	10	262	9.6	21	266	17.4	24	255	14.2			
10,000	13	254	13.0	17	274	12.8	14	265	20.9	10	354	6.3	12	284	10.8	11	19	4.4	10	246	1.3	11	265	18.0	13	289	18.5	15	277	14.6	10	262	9.6	21	266	17.4	24	255	14.2			
12,000	11	268	30.2	11	268	30.2	11	268	30.2	11	268	30.2	11	268	30.2	11	268	30.2	11	268	30.2	11	268	30.2	11	268	30.2	11	268	30.2	11	268	30.2	11	268	30.2	11	268	30.2	11	268	30.2

Altitude (meters) m. s. l.	Ely, Nev. (1,910 m.)			Grand Junction, Colo. (1,475 m.)			Greensboro, N. C. (271 m.)			Havre, Mont. (767 m.)			Jacksonville, Fla. (16 m.)			Joliet, Ill. (178 m.)			Las Vegas, Nev. (575 m.)			Little Rock, Ark. (88 m.)			Medford, Oreg. (416 m.)			Miami, Fla. (12 m.)			Mobile, Ala. (66 m.)			Nashville, Tenn. (194 m.)			New York, N. Y. (15 m.)					
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity			
Surface	30	300	0.5	30	309	1.8	27	326	0.7	29	262	2.6	28	52	3.2	27	229	3.5	30	60	2.1	26	149	0.7	28	288	0.7	30	87	3.0	25	61	1.5	27	180	1.0	29	286	3.0			
500	30	300	0.5	30	309	1.8	27	326	0.7	29	262	2.6	28	52	3.2	27	229	3.5	30	60	2.1	26	149	0.7	28	288	0.7	30	87	3.0	25	61	1.5	27	180	1.0	29	286	3.0			
1,000	30	300	0.5	30	309	1.8	27	326	0.7	29	262	2.6	28	52	3.2	27	229	3.5	30	60	2.1	26	149	0.7	28	288	0.7	30	87	3.0	25	61	1.5	27	180	1.0	29	286	3.0			
1,500	30	300	0.5	30	309	1.8	27	326	0.7	29	262	2.6	28	52	3.2	27	229	3.5	30	60	2.1	26	149	0.7	28	288	0.7	30	87	3.0	25	61	1.5	27	180	1.0	29	286	3.0			
2,000	30	261	1.1	30	347	1.3	23	281	4.9	26	283	8.4	14	267	2.2	18	281	11.0	28	223	2.1	20	236	4.2	24	213	3.7	28	266	2.2	13	335	1.6	23	268	5.1	22	261	11.4			
2,500	30	225	1.1	29	221	2.2	21	282	7.2	18	283	10.0	11	248	3.5	16	283	13.6	26	258	3.1	19	254	5.1	19	243	1.9	25	80	1.6	11	347	2.9	23	271	6.2	17	278	12.0			
3,000	26	258	3.2	27	220	4.0	20	288	8.6	17	286	11.1	11	258	3.0	16	287	14.8	23	273	3.8	16	278	6.6	15	9	1.7	23	67	1.4	10	310	3.1	20	264	7.0	13	283	11.8			
4,000	18	267	6.3	23	219	8.8	20	283	12.3	14	287	9.4	10	256	4.9	14	288	18.3	22	285	5.7	16	281	9.5	13	14	4.4	19	347	1.7	10	310	3.1	20	264	7.0	13	283	11.8			
5,000	18	266	7.6	17	269	10.7	18	275	13.4	16	274	13.2	10	256	4.9	14	288	18.3	22	285	5.7	16	281	9.5	13	14	4.4	19	347	1.7	10	310	3.1	20	264	7.0	13	283	11.8			
6,000	15	287	9.6	15	268	11.9	16	274	13.2	10	256	4.9	14	288	18.3	22	285	5.7	16	281	9.5	13	14	4.4	19	347	1.7	10	310	3.1	20	264	7.0	13	283	11.8						
8,000	13	302	13.0	13	279	14.9	13	279	14.9	13	279	14.9	13	279	14.9	13	279	14.9	13	279	14.9	13	279	14.9	13	279	14.9	13	279	14.9	13	279	14.9	13	279	14.9	13	279	14.9	13	279	14.9
10,000	13	302	13.0	13	279	14.9	13	279	14.9	13	279	14.9	13	279	14.9	13	279	14.9	13	279	14.9	13	279	14.9	13	279	14.9	13	279	14.9	13	279	14.9	13	279	14.9	13	279	14.9	13	279	14.9

Altitude (meters) m. s. l.	Oakland, Calif. (8 m.)			Oklahoma City, Okla. (396 m.)			Omaha, Nebr. (366 m.)			Phoenix, Ariz. (338 m.)			Rapid City, S. Dak. (982 m.)			St. Louis, Mo. (181 m.)			St. Paul, Minn. (225 m.)			San Antonio, Tex. (240 m.)			San Diego, Calif. (13 m.)			Sault Ste. Marie, Mich. (235 m.)			Seattle, Wash. (116 m.)			Spokane, Wash. (603 m.)			Washington, D. C. (24 m.)		
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity
Surface	29	260	1.7	26	182	2.4	28	318	1.0	30	158	0.4	28	335	1.6	24	242	1.2	28	266	1.4	30	39	1.6	26	257	3.1	20	250	1.4	29	272	0.2	27	189	1.4	29	268	1.7
500	29	309	9	26	184	3.0	28	298	1.5	30	136	0.2	28	335	1.6	24	242	1.2	28	266	1.4	30	39	1.6	26	257	3.1	20	250	1.4	29	272	0.2	27	189	1.4	29	268	1.7
1,000	26	7	1.5	25	210	4.4	28	273	3.6	30	125	2.2	28	335	1.6	24	242	1.2	28	266	1.4	30	39	1.6	26	257	3.1	20	250	1.4	29	272	0.2	27	189	1.4	29	268	1.7
1,500	25	342	1.3	24	240	6.8	22	254	7.3	30	164	2.2	28	335	1.6	24	242	1.2	28	266	1.4	30	39	1.6	26	257	3.1	20	250	1.4	29	272	0.2	27	189	1.4	29	268	1.7
2,000	24	312	3.5	24	253	8.6	22	260	9.7	29	170	2.7	28	335	1.6	24	242	1.2	28	266	1.4	30	39	1.6	26	257	3.1	20	250	1.4	29	272	0.2	27	189	1.4	29	268	1.7
2,500	23	299	3.7	23	258	10.0	22	260	10.6	29	214	2.2	28	335	1.6	24	242	1.2	28	266	1.4	30	39	1.6	26	257	3.1	20	250	1.4	29	272	0.2	27	189	1.4	29	268	1.7
3,000	22	301	3.5	23	260	11.1	22	270	11.5	28	245	2.2	28	335	1.6	24	242	1.2	28	266	1.4	30	39	1.6	26	257	3.1	20	250	1.4	29	272	0.2	27	189	1.4	29	268	1.7
4,000	19	299	6.3	23	254	13.4	20	271	16.5	28	286	5.6	21	282	10.0	14	279	12.0	14	285	18.8	17	242	6.5	15	315	6.6	11	279	10.2	14	220	5.5	13	264	4.3	25	279	11.1
5,000	16	308	9.0	22	262	13.2	19	265	19.9	27	262	13.5	15	282	12.8	13	280	14.9	11	282	18.8	12	25																

TABLE 3.—Maximum free-air wind velocities (m. p. s.) for different sections of the United States based on pilot balloon observations during November 1948

Section	Surface to 2,500 meters (m. s. l.)					2,501 to 5,000 meters (m. s. l.)					Above 5,000 meters (m. s. l.)				
	Maximum velocity	Direction	Altitude (m.) m. s. l.	Date	Station	Maximum velocity	Direction	Altitude (m.) m. s. l.	Date	Station	Maximum velocity	Direction	Altitude (m.) m. s. l.	Date	Station
Northeast ¹	56.9	nw.	2,085	5	Boston, Mass.	61.4	wnw.	5,000	27	Columbus, Ohio	84.7	nw.	10,172	10	Caribou, Maine.
East-Central ²	42.7	sw.	1,904	26	Washington, D. C.	54.4	w.	4,112	22	Elkins, W. Va.	78.0	w.	11,571	28	Greensboro, N. C.
Southeast ³	26.0	wnw.	2,500	8	Spartanburg, S. C.	29.7	w.	4,107	8	Spartanburg, S. C.	63.0	s.	21,921	23	Charleston, S. C.
North-Central ⁴	47.5	s.	1,023	18	Marquette, Mich.	49.2	wnw.	4,900	28	St. Paul, Minn.	73.6	wnw.	9,502	1	Milwaukee, Wis.
Central ⁵	52.6	sw.	1,836	21	Omaha, Nebr.	58.2	nw.	2,823	10	Goodland, Kans.	74.0	wnw.	12,871	20	Springfield, Mo.
South-Central ⁶	38.5	wsww.	1,714	24	Amarillo, Tex.	43.5	wsww.	5,000	6	Abiene, Tex.	104.0	wnw.	14,063	12	Little Rock, Ark.
Northwest ⁷	36.5	sse.	1,671	23	Boise, Idaho	51.2	nnw.	5,000	1	Tatooch Is., Wash.	72.0	sw.	6,556	1	Ellensburg, Wash.
West-Central ⁸	40.4	s.	2,467	20	Salt Lake City, Utah.	56.4	wnw.	4,127	21	Cheyenne, Wyo.	63.5	sw.	10,294	8	Grand Junction, Colo.
Southwest ⁹	28.7	nw.	2,105	2	Las Vegas, Nev.	48.3	sw.	5,000	8	El Paso, Tex.	82.5	sw.	7,789	8	Winslow, Ariz.

¹ Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, and northern Ohio.

³ Delaware, Maryland, Virginia, West Virginia, southern Ohio, Kentucky, eastern Tennessee, and North Carolina.

¹ South Carolina, Georgia, Florida, and Alabama.

⁴ Michigan, Wisconsin, Minnesota, North Dakota, and South Dakota.

¹ Indiana, Illinois, Iowa, Nebraska, Kansas, and Missouri.

[illegible]

^a Mississippi, Arkansas, Louisiana, Oklahoma, Texas (except El Paso), and western Tennessee.

¹ Montana, Idaho, Washington, and Oregon.

* Wyoming, Colorado, Utah, northern Nevada, and northern California.

* Southern California, southern Nevada, Arizona, New Mexico, and extreme west

Texas.

RIVER STAGES AND FLOODS FOR NOVEMBER 1946

C. R. JORDAN

Precipitation during November was above normal over most of the United States, but there were several dry areas scattered throughout the country, including a broad strip from Florida and Georgia northward over the Appalachians and extending into Indiana, eastern Michigan, and the Middle Atlantic and New England States except the extreme northern border. More than three times the usual precipitation occurred in large areas of eastern Texas, eastern Colorado, and the southern portions of Nevada and California.

Stream flow was generally high for the month and flood stages were exceeded at a number of stations, but there was no widespread or severe flooding, and damage from flooding was light.

Floods in the south-central States.—Flood stages were exceeded in many streams in Missouri, Arkansas, Oklahoma, and Texas, but overflow was neither severe nor extensive.

Columbia Basin.—Minor flood crests occurred on most streams in western Oregon during the latter part of November as a result of persistent general rains augmented by the melting of some snow that had accumulated earlier. Little damage resulted except for some flooding of farm land.

FLOOD STAGE REPORT FOR NOVEMBER 1946

River and station	Flood stage	Above flood stages— dates		Crest ¹	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE					
Saluda: Pelzer, S. C.-----	<i>Feet</i> 6	19	19	<i>Feet</i> 6.0	19
EAST GULF OF MEXICO DRAINAGE					
Black Warrior:					
Lock No. 10, Tuscaloosa, Ala.-----	47	12	13	50.1	12
Lock No. 7, Eutaw, Ala.-----	35	13	16	37.6	14
Tombigbee: Lock No. 3, Ala.-----	33	13	23	39.5 37.6	16 22
MISSISSIPPI SYSTEM					
Upper Mississippi Basin					
Meramec:					
Sullivan, Mo.-----	11	11	12	14.6	11
Pacific, Mo.-----	11	4	4	11.5	4
Valley Park, Mo.-----	14	10	13	16.0	12
Missouri Basin					
Osage:					
Osceola, Mo.-----	20	1	3	24.1	2
Warsaw, Mo.-----	31	2	4	33.9	3
Lakeside, Mo.-----	60	1	8	62.4	3
St. Thomas, Mo.-----	23	10	12	60.1	10
		2	6	29.6	4

See footnotes at end of table.

FLOOD STAGE REPORT FOR NOVEMBER 1946—Con.

River and station	Flood stage	Above flood stages— dates		Crest ¹	
		From—	To—	Stage	Date
Missouri Basin—Continued					
Missouri:	Feet			Feet	
Hermann, Mo.....	21	3	4	21.4	3
St. Charles, Mo.....	25	2	5	26.7	4
White Basin					
White:					
Cotter, Ark.....	21	10	10	22.0	10
Calico Rock, Ark.....	19	10	11	21.4	10-11
Batesville, Ark.....	23	10	13	26.4	11
Augusta, Ark.....	32	14	17	32.4	16
Georgetown, Ark.....	21	16	23	22.1	18-19
Clarendon, Ark.....	26	24	28	26.2	26-27
Arkansas Basin					
Poteau: Poteau, Okla.....	21	6	13	28.0 28.5	8 10
Fouche LaFave:					
		7	16	27.4	10
Perryville, Ark.....	20	28	(?)	26.4 23.6	14 30
				24.3	11
Houston, Ark.....	18	7	16	23.1	14
		20	(?)		
Red Basin					
Onachita:					
Arkadelphia, Ark.....	17	11	11	17.6	11
Camden, Ark.....	26	11	17	29.8	14
Sulphur:					
Hagansport, Tex.....	38	3	11	45.0	6
Naples, Tex.....	22	6	19	32.2	9
Texarkana, Tex.....	22	10	29	31.2	13
Red: Fulton, Ark.....	25	8	13	26.8	10
WEST GULF OF MEXICO DRAINAGE					
Sabine:					
Mineola, Tex.....	14	4	15	20.7	7
Gladewater, Tex.....	26	8	21	38.6	11
Logansport, La.....	25	18	(?)	32.2	22
Bon Wier, Tex.....	17	13	14	17.0	14
		20	(?)		
Neches: Evadale, Tex.....	16	15	22	16.6	17
Elm Fork: Carrollton, Tex.....	6	4	8	10.0	7
East Fork: Rockwall (nr.), Tex.....	10	2	12	19.6	7
		16	19	11.7	18
Trinity:					
Dallas, Tex.....	28	3	10	35.9	8
Rosser, Tex.....	26	5	15	36.4	10
Trinidad, Tex.....	28	5	19	41.3	12
Long Lake, Tex.....	40	11	21	44.1	16
Liberty, Tex.....	24	5	(?)	27.2 27.3	10 13
				27.2	29
Guadalupe:					
Gonzales, Tex.....	20	5	6	24.2	6
Victoria, Tex.....	21	7	8	22.0	8
PACIFIC SLOPE DRAINAGE					
Columbia Basin					
McKenzie:					
Leaburg, Oreg.....	12	26	28	15.1	26
Coburg (nr.), Oreg.....	11	27	27	11.2	27
Santiam: Jefferson, Oreg.....	13	26	29	16.4	26
South Yamhill: Willamina, Oreg.....	8	22	22	8.0	22
Willamette:					
Harrisburg, Oreg.....	12	26	29	16.2	27
Albany, Oreg.....	20	28	29	20.3	28
Oregon City, Oreg.....	12	30	30	12.0	30

¹ Provisional.² Continued at end of month.

CLIMATOLOGICAL DATA FOR NOVEMBER 1946

CONDENSED CLIMATOLOGICAL SUMMARY OF TEMPERATURE AND PRECIPITATION BY SECTIONS

[For description of tables and charts, see Review, January 1943, p. 15]

In the following table are given for the various sections of the climatological service of the Weather Bureau the monthly average temperature and total rainfall; the stations reporting the highest and lowest temperatures, with dates of occurrence; the stations reporting the greatest and least total precipitation; and other data as indicated by the several headings.

The mean temperature for each section, the highest and

lowest temperatures, the average precipitation, and the greatest and least monthly amounts are found by using all trustworthy records available.

The mean departures from normal temperatures and precipitation are based only on records from stations that have 10 or more years of observations. Of course, the number of such records is smaller than the total number of stations.

Section	Temperature								Precipitation					
	Section average	Departure from the normal	Monthly extremes						Section average	Departure from the normal	Greatest monthly		Least monthly	
			Station	Highest	Date	Station	Lowest	Date			Station	Amount	Station	Amount
Alabama	60.8	+6.5	2 stations	88	15	Valley Head	27	14	4.97	+1.76	Greenville	9.09	Newton	1.37
Arizona	47.2	-3.4	Sabino Canyon	87	22	Fort Valley	-8	10	1.43	+4.47	Bright Angel R. S.	4.45	Stephens Ranch	.60
Arkansas	53.6	+2.2	3 stations	85	1	GPbert	17	18	9.09	+5.26	Green Forest	18.40	Lake City	2.68
California	48.2	-3.9	Greenland Ranch	94	2	Ellery Lake	-3	24	4.97	+2.50	Mount Wilson Airway Sta.	20.35	El Centro	.05
Colorado	31.2	-4.1	Eversoll Ranch	79	23	Dillon	-16	11	2.39	+1.60	Karval	7.41	San Luis Lakes	.08
Florida	71.2	+6.1	2 stations	92	1	Jasper	33	15	2.76	+6.2	Naples	9.69	Cedar Key	T
Georgia	60.6	+6.0	2 stations	88	11	2 stations	26	15	2.33	-24	La Fayette	7.16	Montrie	.38
Idaho	33.5	-1.8	Swan Falls	66	18	2 stations	-11	13	3.38	+1.28	Roland	12.52	Ririe	.45
Illinois	45.3	+3.1	Cairo	78	1	Dixon	11	22	4.74	+2.10	Alton	12.80	Waukegan	1.95
Indiana	46.8	+4.3	Tell City	84	1	3 stations	15	23	3.74	+6.8	Vincennes	6.91	Huntington	2.18
Iowa	28.1	+1.7	Centerville	68	15	Inwood	1	25	1.74	+14	Columbus Junction	3.81	Denison	.72
Kansas	42.9	-4	Elkhart	77	23	St. Francis	5	11	2.56	+1.29	Pittsburg	8.87	Atchison	.55
Kentucky	51.2	+4.7	Lovelsville	88	1	Headquarters	15	23	3.45	+6.5	Mayfield	8.98	Grayson	.96
Louisiana	62.8	+3.9	4 stations	89	11	2 stations	30	23	6.46	+2.52	Angola	12.45	Audubon Park (N. O.)	2.05
Maryland-Delaware	49.8	+4.4	Great Falls, Md.	90	4	Oakland, Md.	15	18	1.41	-1.16	Snow Hill, Md.	4.06	Cumberland, Md.	.56
Michigan	39.2	+2.8	Hastings	70	2	Mio	-2	22	2.61	+6.7	Hulbert	5.61	Detour	1.09
Minnesota	29.2	-4	Roseau	69	1	Roseau	-22	29	1.37	+21	Virginia	2.54	Angus	.24
Mississippi	60.1	+4.9	Utica	89	3	2 stations	28	23	6.93	+3.26	Woodville	11.89	Eupora	2.31
Missouri	47.0	+2.5	Poplar Bluff	81	1	Albany	13	26	6.44	+3.73	Wasola	13.89	Lexington	.43
Montana	27.9	-4.1	Fort Benton	67	5	Chester	-32	21	1.50	+4.7	Heron	7.43	Busby	.08
Nebraska	36.1	-1.2	Purdum	73	23	3 stations	-4	10	1.82	+1.06	Winnebago	4.25	Scottsbluff	.17
Nevada	38.1	-1.8	Mesquite	73	26	Wells	0	21	1.77	+1.07	Kyle Canyon R. S.	6.43	Indian Springs	.49
New England	41.5	+3.4	Chestnut Hill, Mass.	79	1	Houlton, Maine	-3	30	2.02	-1.51	Lemington, Vt.	5.08	Providence, R. I.	.67
New Jersey	48.3	+4.4	Hammononton	78	2	Charlotteburg	10	20	1.45	-1.81	Clayton	2.22	Runyon	.62
New Mexico	40.0	-2.4	Pearl	85	23	Eagle Nest	-12	10	.63	+2.29	Sandia Park	3.37	2 stations	.00
New York	42.6	+4.4	Avon	78	3	2 stations	7	24	2.31	-73	Eagle Falls	6.46	Cairo	.48
North Carolina	55.2	+5.2	Greenville	89	1	Cullawhee	19	14	2.86	+3.22	Rock House	5.59	Enka	1.06
North Dakota	25.3	-1.4	Bowbells	68	5	Bottineau	-22	22	2.35	-25	Fullerton	1.83	3 stations	.02
Ohio	46.1	+4.5	4 stations	83	11	Dennison	13	23	2.73	+6.04	Mt. Lookout	5.18	Chesapeake	.79
Oklahoma	50.4	-6	Tuskahoma	84	1	Kenton	13	11	5.42	+3.37	Tuskahoma	15.63	Hollis	1.31
Oregon	37.6	-2.7	Lake Creek	74	4	Chemult	0	2	4.84	+1.10	Valsetz	23.36	Niah Ranch	.61
Pennsylvania	44.7	+3.3	Uniontown	83	3	Kane	11	15	1.26	-1.61	Corry	3.57	Carlisle	.47
South Carolina	59.0	+5.2	Orangeburg	89	26	Cherokee 4	27	13	2.82	+5.1	Caesars Head	6.64	Trenton	.96
South Dakota	32.2	-1.0	Midland	70	18	Pollock	-8	27	7.0	+6.7	Vermillion	2.50	3 stations	T
Tennessee	54.0	+5.4	2 stations	86	11	Rugby	18	23	5.02	+1.44	Waynesboro	8.22	Tri-City	1.67
Texas	57.5	+4	Rio Grande	99	3	Muleshoe	18	26	4.34	+2.22	Goose Creek	25.30	6 stations	.00
Utah	35.3	+2.0	2 stations	72	22	Woodruff	-11	10	2.19	+1.19	Alta	6.76	Hanksville	.67
Virginia	51.4	+4.7	Columbia	86	4	3 stations	18	15	1.76	-66	2 stations	4.17	Riverton	.46
Washington	36.0	-3.5	2 stations	71	18	Stockdill Ranch	-8	21	5.22	+6.8	Wind River	21.81	Richland	.68
West Virginia	48.4	+5.1	4 stations	86	11	McNeill	10	19	1.67	-1.08	Coburn Creek	3.61	Petersburg	.40
Wisconsin	35.4	+1.9	2 stations	64	18	Danbury	-14	25	2.40	+5.0	Goodrich	3.67	Kenosha	1.14
Wyoming	31.0	-6	La Grange	78	23	Bondurant	-17	3	.74	+61	Bechler River	3.78	Powell	.02
Alaska (October)	33.6	+3.1	4 stations	58	11	Wiseman	-21	31	4.41	+74	Little Port Walter	23.11	Big Delta	.32
Hawaii	71.8	.0	Hana	91	14	Haleakala R. S.	36	3	7.55	-32	Kukui	44.00	2 stations	.00
Puerto Rico	75.9	-4	Ponce	95	4	Quineo Dam	57	12	4.17	-2.73	Rio Blanco 1,800 feet	13.30	Santa Rita	.10

1 Other dates also.

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS FOR NOVEMBER 1946

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS																																		
District and station	Elevation of instruments			Pressure			Temperature of the air										Precipitation	Wind				Total snowfall Show, sleet, and ice on ground at end of month	Number of days with thunder- storms											
	Barometer above sea level	Thermometer above ground	Anemometer above ground	Station	Sea level	Departure from normal	Temperature of the air					Total degree days	Mean temperature of the dew point	Mean relative humidity	Total	Departure from normal		Greatest in 24 hours	Days with 0.01 inch or more	Average hourly velocity	Prevailing direction			Maximum velocity	Miles per hour	Direction	Date	Clear days	Partly cloudy days	Cloudy days	Average cloudiness, tenths	Total snowfall	Snow, sleet, and ice on ground at end of month	Number of days with thunder- storms
							Mean	Maximum	Minimum	Greatest daily range																								
NEW ENGLAND																																		
Eastport	75	67	85	1,014.6	1,017.6	+1.3	39.7	56.20	46	19	24	33	25	759	32	74	2.79	-1.5	11	10.8	nw.	37	nw.	5	5	9	15	6.6	0.0	0	0			
Greenville, Maine	1,070	6	41	978.0	1,018.3	...	32.3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Portland, Maine	289	4	45	1,014.2	1,018.3	+2.0	40.6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Concord	403	6	51	1,007.8	1,019.0	+1.0	40.7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Burlington	124	33	62	1,014.2	1,019.0	+1.4	47.8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Boston	12	4	34	1,019.0	1,019.3	+1.7	48.3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nantucket	26	11	46	1,018.6	1,019.3	+1.3	49.8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Block Island	159	46	60	1,013.9	1,019.6	+1.3	48.2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Providence	159	5	44	1,013.9	1,020.0	+1.4	45.4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hartford	107	5	39	1,016.3	1,020.3	+2.0	47.0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
New Haven	107	5	39	1,016.3	1,020.3	+2.0	47.0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
MIDDLE ATLANTIC																																		
Albany	97	26	40	1,015.6	1,019.0	...	42.6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
New York	314	415	454	1,008.8	1,020.3	+1.3	50.0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Harrisburg	374	30	49	1,007.5	1,021.7	+2.1	47.2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Philadelphia	114	5	57	1,016.9	1,021.3	+2.0	51.6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Reading	323	47	306	1,009.1	1,021.3	...	48.7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Seranton	805	72	104	990.9	1,020.7	+1.7	45.6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Atlantic City	62	37	172	1,019.0	1,021.0	+1.7	51.8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Trenton	190	59	107	1,014.2	1,021.3	...	49.8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Baltimore	123	100	215	1,016.9	1,021.7	+1.7	52.4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Washington	112	56	100	1,017.6	1,021.7	+1.4	52.6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cape Henry	18	8	54	1,020.3	1,021.0	...	57.4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lynchburg	686	4	50	996.6	1,021.7	+1.4	51.8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Norfolk	91	80	125	1,018.3	1,021.7	+2.1	57.5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Richmond	144	11	52	1,015.9	1,021.3	+1.3	54.2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
SOUTH ATLANTIC																																		
Asheville	2,253	77	92	941.8	1,022.0	+1.3	52.6		
Charlotte	779	63	86	993.2	1,021.3	+1.0	56.8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Greensboro	896	6	50	989.8	1,022.0	...	53.2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hatteras	11	5	50	1,020.0	1,020.3	...	76.2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Raleigh	376	5	69	1,007.8	1,021.7	+1.4	56.3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wilmington	72	73	107	1,018.0	1,020.3	...	63.6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Charleston	48	11	92	1,018.3	1,020.0	...	63.6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Columbia, S. C.	347	70	91	1,008.1	1,020.7	+1.7	60.2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Greenville, S. C.	1,040	18	36	983.7	1,021.3	...	56.2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Augusta	182	62	77	1,013.9	1,020.3	...	61.1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Savannah	65	73	152	1,017.6	1,200.0	...	64.4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jacksonville	43	86	110	1,017.3	1,019.0	...	68.9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
FLORIDA PENINSULA																																		
Key West	21	10	64	1,014.6	1,015.2	-1.4	78.6		
Miami	25	242	249	1,015.2	1,016.3	-1.7	75.0		
Tampa	35	6	43	1,015.9	1,017.3	-1.3	73.6		
EAST GULF																																		
Macon	370	79	87	1,006.4	1,019.6	...	61.0		
Thomasville	274	49	58	1,009.1	1,019.3	...	65.2		
Apalachicola	55	11	51	1,016.9	1,018.0	...	67.8		
Pensacola	56	54	79	1,016.6	1,018.6	-1.0	65.8		
Anniston	741	9	59.1		
Birmingham	700	5	62	994.9	1,020.3	...	58.6		
Mobile	57	86	161	1,016.6	1,018.6	-1.0	64.6		
Montgomery	218	92	105	1,011.9	1,019.6	...	61.9		
Meridian	375	67	92	1,005.8	1,019.3		
Vicksburg	247	82	102	1,009.8	1,018.6	...	60.5		
New Orleans	53	50	84	1,015.9	1,017.6	...	65.2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...</

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS FOR NOVEMBER 1946—Continued

District and station	Elevation of instruments			Pressure		Temperature of the air										Precipitation			Wind																		
	Barometer above sea level	Thermometer above ground	Anemometer above ground	Station	Sea level	Departure from normal	Mean	Departure from normal	Maximum	Date	Mean maximum	Minimum	Date	Mean minimum	Greatest daily range	Total degree days	Mean temperature of the dew point	Mean relative humidity	Total	Departure from normal	Greatest in 24 hours	Days with 0.01 inch or more	Average hourly velocity	Prevailing direction	Maximum velocity		Date	Clear days	Partly cloudy days	Cloudy days	Average cloudiness, tenths	Total snowfall	Snow, sleet, and ice on ground at end of month	Number of days with thunderstorms			
																									Miles per hour	Direction											
OHIO VALLEY AND TENNESSEE—CON.																																					
Evansville ¹	431	11	40	1,004.7	1,020.3	+3.8	48.2	+3.8	50	1	59	23	37	38	503	40	84	4.47	+7.2	2.21	10	7.9	dw.	35	s.	24	7	6	17	6.6	7.2	T	.0	0			
Indianapolis ¹	823	5	84	989.5	1,020.0	-1.7	45.2	+4.5	75	1	55	20	23	35	502	38	79	3.27	-0.88	1.07	12	10.6	sw.	39	sw.	24	8	5	17	6.5	6.0	T	.0	0			
Terre Haute ¹	578	68	149	999.3	1,021.0	-47.6	47.6	+3.8	70	1	56	23	23	39	500	38	78	5.06	+2.2	2.46	8	6.3	e.	31	sw.	22	10	5	15	6.2	6.0	T	.0	1			
Cincinnati ¹	627	11	51	998.0	1,021.0	-1.0	51.0	+6.1	76	2	37	23	23	40	512	43	80	2.75	-0.99	1.00	11	9.2	s.	24	sw.	22	9	7	14	5.9	6.0	T	.0	0			
Columbus ¹	822	90	110	990.9	1,021.3	+1.7	48.0	+6.1	76	2	37	23	23	40	528	37	80	2.73	-1.94	1.00	10	11.9	s.	32	sw.	22	11	4	15	6.3	6.0	T	.0	0			
Dayton ¹	1,003	6	55	984.1	1,021.0	-46.1	46.1	+5.7	75	3	56	20	23	37	570	37	80	2.73	-1.94	1.00	10	11.9	s.	32	sw.	22	11	4	15	6.3	6.0	T	.0	0			
Elkins ¹	1,947	4	45	951.9	1,022.4	+2.4	43.9	+6.6	80	3	61	18	19	31	48	37	83	1.67	-1.2	1.48	8	6.4	w.	34	w.	22	10	7	13	5.6	6.0	T	.0	0			
Parkersburg	637	77	84	997.6	1,021.3	+1.4	49.8	+6.0	82	3	61	20	23	30	37	453	38	73	1.53	-1.0	1.86	8	5.8	sw.	20	sw.	22	10	8	12	5.8	6.0	T	.0	0		
Pittsburgh ¹	842	39	54	989.8	1,020.7	+1.4	46.8	+5.6	79	3	56	21	23	37	580	38	72	1.99	-1.3	1.40	8	9.9	s.	32	sw.	22	10	7	13	6.0	6.0	T	.0	0			
LOWER LAKES																																					
Buffalo ¹	768	34	96	990.5	1,019.0	+1.4	44.4	+5.9	73	3	53	26	23	36	29	614	34	74	2.47	-0.4	1.00	14	14.4	w.	47	w.	22	4	6	20	7.8	7.2	T	.0	0		
Canton	448	10	61	1,001.0	1,017.3	-38.5	38.5	+3.5	55	8	46	15	23	31	33	791	32	78	3.95	+8.1	1.00	19	8.8	w.	35	w.	22	3	10	19	8.1	9.0	T	.0	0		
Oswego	335	71	85	1,006.1	1,018.6	+1.0	44.4	+3.0	70	3	50	26	23	36	25	619	34	68	2.57	-8.67	1.00	17	11.7	w.	28	sw.	22	3	6	21	7.7	7.6	T	.0	0		
Rochester ¹	523	5	69	999.7	1,019.0	-1.4	43.7	+7.0	72	3	52	24	29	36	32	638	34	76	2.36	-2.96	1.00	15	10.8	sw.	36	w.	22	4	5	21	7.5	7.5	T	.0	0		
Syracuse ¹	506	5	57	997.0	1,019.2	+1.3	44.5	+7.3	74	3	53	23	19	36	34	614	34	72	2.20	-2.95	1.00	18	11.1	sw.	33	w.	22	4	5	21	7.5	7.5	T	.0	0		
Elie ¹	714	57	81	993.2	1,020.0	+2.0	47.6	+3.2	76	3	55	27	22	40	30	524	35	78	3.48	+2.1	1.06	14	9.7	sw.	36	sw.	22	6	5	19	7.4	7.7	T	.0	0		
Cleveland ¹	762	27	54	991.9	1,020.0	+1.7	45.0	+7.0	76	3	55	23	23	37	32	599	36	75	2.08	-6.99	1.00	9	11.8	s.	35	w.	22	4	12	14	6.9	7.0	T	.0	0		
Sandusky	629	5	67	996.6	1,020.3	+1.7	46.7	+5.6	75	3	55	21	23	38	34	548	36	80	1.91	-5.87	1.00	10	10.0	sw.	31	w.	22	11	6	13	5.8	6.0	T	.0	0		
Toledo ¹	628	5	47	996.3	1,020.0	+1.7	43.5	+4.8	72	3	53	19	23	34	33	647	36	80	1.81	-6.70	1.00	12	10.8	sw.	34	sw.	24	8	6	16	6.6	6.6	T	.0	0		
Fort Wayne ¹	857	5	33	987.8	1,019.6	-43.0	43.0	+4.2	68	3	52	18	23	34	34	664	36	82	2.63	-2.83	1.00	13	9.3	sw.	38	w.	21	8	6	16	6.6	6.6	T	.0	0		
Detroit ¹	730	5	78	992.6	1,019.6	+1.6	43.9	+4.7	69	3	51	23	23	37	29	632	36	79	1.36	-1.1	1.40	10	10.3	sw.	36	w.	22	5	8	17	7.5	7.3	T	.0	0		
UPPER LAKES																																					
Alpena	609	5	89	994.6	1,017.6	+1.3	38.8	+3.1	60	6	46	19	22	32	24	785	32	79	1.61	-1.0	1.40	12	11.8	dw.	34	sw.	22	1	8	21	8.0	3.6	9.0	0	0		
Escanaba	612	51	72	994.2	1,017.6	+1.3	38.8	+3.1	60	6	46	19	22	32	24	785	32	79	1.61	-1.0	1.40	12	11.8	dw.	34	sw.	22	1	8	21	8.0	3.6	9.0	0	0		
Grand Rapids ¹	707	70	244	992.2	1,018.6	+1.0	43.0	+4.6	62	2	50	23	23	36	28	867	30	78	2.10	-1.08	1.00	10	11.5	dw.	34	sw.	22	5	10	15	7.1	1.7	6.0	0	0		
Lansing ¹	878	5	90	986.5	1,019.0	-41.6	41.6	+4.1	63	2	49	22	23	34	30	701	30	77	1.88	-6.73	1.00	13	11.6	dw.	34	sw.	22	6	5	19	7.3	4.4	0	0	0		
Marquette	734	44	73	988.5	1,016.3	-33.4	33.4	+1.0	62	6	42	14	26	28	31	904	28	74	2.50	-4.51	1.00	15	9.9	w.	42	sw.	22	2	3	24	8.4	9.1	4.7	0	0		
Sault Sainte Marie ¹	614	11	52	993.2	1,016.6	+3.3	33.8	+3.4	56	6	40	11	26	27	26	937	29	85	4.24	+1.2	1.78	18	12.7	sw.	47	dw.	22	3	2	24	8.3	23.7	8.0	0	0		
Chicago ¹	673	5	36	994.2	1,019.3	+1.0	42.4	+4.7	64	15	51	11	23	28	33	851	28	76	2.60	+4.77	1.00	10	9.7	s.	35	sw.	21	6	5	19	7.0	9.0	7.0	0	0		
Green Bay	617	5	32	994.9	1,018.3	+1.0	36.6	+2.6	58	6	45	11	23	28	33	851	28	76	2.60	+4.77	1.00	10	9.7	s.	35	sw.	21	6	5	19	7.0	9.0	7.0	0	0		
Milwaukee ¹	681	33	66	993.2	1,018.3	+1.0	36.6	+2.6	58	6	45	11	23	28	33	851	28	76	2.60	+4.77	1.00	10	9.7	s.	35	sw.	21	6	5	19	7.0	9.0	7.0	0	0		
Duluth ²	1,133	5	47	974.9	1,018.0	+7.2	29.6	-3.1	59	5	38	-3	25	21	34	1,060	22	87	1.54	+1.60	1.00	8	13.4	w.	37	w.	21	13	3	14	5.4	4.6	3.1	0	0		
NORTH DAKOTA																																					
Fargo ¹	940	6	47	983.1	1,018.6	+3.2	27.4	+3.3	63	1	28	-5	25	17	36	1,129	22	85	1.04	+1.60	1.00	6	12.8	s.	37	dw.	21	12	7	11	5.5	4.9	3.2	0	0		
Bismarck ¹	1,677	5	43	987.0	1,019.3	+1.0	27.8	+1.5	59	5	39	-5	22	16	35	1,117	20	77	1.17	-4.11	1.00	3	9.9	dw.	38	dw.	21	9	8	13	5.9	2.3	9.0	0	0		
Devils Lake	1,478	11	44	983.4	1,019.3	+1.3	23.8	-7.0	60	5	34	-10	24	13	34	1,238	16	76	2.20	-5.07	1.00	7	9.1	dw.	24	n.	7	10	8	12	5.6	3.5	2.9	0	0		
Grand Forks ¹	832	4	41	987.1	1,019.3	-24.5	24.5	-1.4	60	5	36	-11	24	13	34	1,216	18	83	1.75	-1.19	1.00	5	6.7	sw.	25	sw.	17	7	8	15	6.6	4.2	4.1	0	0		
Williston	1,878	42	50	949.5	1,019.0	+1.0	25.8	-1.4	61	5	36	-11	24	13	34	1,175	18	76	1.45	-1.30	1.00	5	6.7	sw.	25	sw.	17	7	8	15	6.6	4.2	4.1	0	0		
UPPER MISSISSIPPI																																					
Minneapolis-St. Paul ¹	919	43	74	983.4	1,018.0	-0.3	33.0	+3.1	60	15	42	2	25	25	37	962	26	78	1.22	-0.47	1.00	10	11.1	sw.	40	w.	21	9	5	16	6.1	4.1	2.0	1	0		
La Crosse ¹	714	5	29	991.5	1,018.3	-0.35	35.6	+1.9	56	15	44	11	22	27	33	881	29	82	1.89	-3.51	1.00	11	9.4	s.	35	w.	21	7	5	18	6.8	3.8	0	0	0		
Madison ¹	974	70	75	982.4	1,019.0	+1.0	38.0	+2.8	59	15	46	13	22	30	31	809	31	81	1.63	-2.54	1.00	13	9.5	sw.	26	w.	21	7	4	19	7.1	6.0	0	0	0		
Charles City	1,015	10	31	981.7	1,019.6	+1.0	36.0	+3.0	57	20	45	11	22	27	37	874	27	87	1.44	-1.38	1.00	8	7.1	sw.	23	s.	18	12	3	15	6.0	6.0	0	0	0		
Moline	606	6	50	998.0	1,020.7	+2.1	40.8	+3.3	62	15	50	17	22	31	36	730	33	77	2.49	+7.10	1.00	8	10.3	s.	34	w.	21	9	4	17	6.3	0	0	0	0		
Des Moines ²	960	5	99	987.5	1,019.3	+7.40	40.2	+2.8	65	15	50	17	22	31	34	741	30	76	1.85	-6.40	1.00	8	10.3	n.	31	dw.	21	9	5	16	6.4	T					

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS FOR NOVEMBER 1946—Continued

District and station	Elevation of instruments			Pressure		Temperature of the air										Precipitation			Wind					Total snowfall	Snow, sleet, and ice on ground at end of month	Number of days with thunderstorms																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
	Barometer above sea level	Thermometer above ground	Anemometer above ground	Station	Sea level	Departure from normal	Mean	Departure from normal	Maximum	Date	Mean maximum	Minimum	Date	Mean minimum	Greatest daily range	Total degree days	Mean temperature of the dew point	Mean relative humidity	Total	Departure from normal	Greatest in 24 hours	Days with 0.01 inch or more	Average hourly velocity				Prevailing direction	Maximum velocity		Clear days	Partly cloudy days	Cloudy days	Average cloudiness, tenths	Total	In.	In.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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MIDDLE SLOPE	ft.	ft.	ft.	mb.	mb.	mb.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	%	In.	In.	In.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.	mi.

SEVERE LOCAL STORMS FOR NOVEMBER 1946

[The table herewith contains such data as have been received concerning severe local storms that occurred during the month. A revised list of tornadoes will appear in the United States Meteorological Yearbook]

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks
Ontario, Calif., and vicinities	Nov. 1946 1-2	9:30 p. m.-1 a. m.				Wind and sand	Blowing sand disrupted highway traffic; some trees blown over; small airplane at Ontario airport overturned; small loss in citrus fruits and avocados.
Hempstead County, Ark., northern portion.	2	3:30 p. m.	150-200	0		Tornado	Number of homes and business offices demolished and communications disrupted; large new home destroyed, service station flattened, cotton gin badly damaged, and 6 Negro homes in this vicinity destroyed. In Washington, Ark., old church building, a famous landmark, totally destroyed. With lines of the Southwestern Gas & Electric Co., down in the area, most of the northern part of the county was without light or power, and Washington, Ark., was isolated from outside communication.
Terlton to Hominy, Okla. Yolo, Solano, and San Joaquin Counties, Calif.	2 2	4:30-4:40 a. m.	13		\$30,000	Heavy hail. Northerly winds	Damage mostly to roof tops; path 22 miles long. Telephone lines blown down, loss in Milo maize and olives. At Lodi plate window glass was broken. This was a general northerly wind which was felt in many localities in central California, but only a few reports of damage were received.
Colorado, entire eastern section.	2-5			13	10,000,000	Heavy snow and wind.	All forms of transportation disrupted; planes grounded for 3 days. Several highways blocked from 12 to 48 hours. More than 800 cars stalled at Limon, numerous other cars elsewhere. Some secondary roads blocked from 2 to 3 weeks. Isolated country homes received food and supplies by plane, dog sleigh, or Army "wrecks." Schools closed from 2 days to 2 weeks; many stores and offices closed for 3 days. Milk, grocery, and coal deliveries in Denver cut 80 percent. 2 buildings in Denver and 1 in Flagler closed in. 270 livestock killed, in addition to 17 percent loss by shrinkage. Loss in 700 acres of potatoes; best harvesting delayed 2 to 3 weeks, with the sugar content lowered.
Beaumont, Tex., vicinity of.	3-4				3,000,000	Excessive rain	Storm sewers in portions of Beaumont inadequate, causing the flooding of many business houses and homes. Rain was unusually heavy over the western portion of Jefferson County and caused an unestimated loss in the rice crop. At the Amelia Experiment Station, 6 miles west of Beaumont, 10.88 inches fell between 10:30 p. m., of the 3d and 7 a. m., of the 4th. An additional 0.37 inch fell during the day, making the 24-hour total rainfall 11.25 inches.
Alton, Sioux City, Shelton, and Estherville, Iowa, and vicinities.	7-8					Snowfall	Considerable rough ice on the pavement in the Sioux City area made driving hazardous; 20 minor traffic accidents reported. 8 inches of snow fell and the thermometer dropped to 28 degrees. Hazardous driving conditions also were reported at Shelton, where 12 inches of snow fell. Estherville had 7 inches of wet snow. Amount of damage from this storm not estimated.
Nebraska, northeastward across the State.	7-8					do	Snowfall heaviest in the Wayne area, where day-long snow on the 7th measured 16 inches. In the west the snow measured from 5 to 10 inches, 10 inches being reported at Overton. In the extreme east snow melted as fast as it struck ground. Roads icy in other sections of State, however, and side roads were deep with snow although maintenance crews kept most main highways open. In the Wayne area road crews worked all night of the 7th to keep highways going north and south clear, and Sunday afternoon were clearing the roads to Winslow, Carroll, and Wakefield. Many cars were stalled. Damage to telephone lines; loss in crops.
Yolo and Solano Counties, Calif. Lafayette, La.	8 10	About 5 p. m.				Northerly winds. High winds	Trees broken and uprooted; barns and outbuildings on farms north of Lafayette demolished; damage to crops small, as most were already harvested. Amount of damage not estimated.
Rayne, La.	10	5 p. m.	880	0		Tornado	Storm moved from southwest to northeast. 3 persons injured. Several barns and outbuildings demolished, and several houses twisted from their foundations. Electric power systems disrupted; some livestock killed.
Pointe Coupee Parish, La.	10	do	50	2	10,000	do	Storm moved from southwest to northeast, striking 2 plantations near Mississippi River about 1 1/4 miles apart. 2 Negroes killed and several injured. 2 houses, 3 barns filled with hay, tool shed, and blacksmith shop demolished; a church, and 3 houses damaged; hay stored in barns destroyed; path from 2 to 10 miles long.
Hattiesburg, Miss.	10	9 p. m.	400	0	100,050	do	Storm moved from southwest to northeast, dipping and rising as it moved. Lumber sheds and livestock yards unroofed; several small buildings damaged. Crop loss, \$50; damage to buildings, \$100,000; path 1 mile long. It is possible this is the same tornado as the one which struck Pointe Coupee at 5 p. m., of the same day, with speed of about 50 miles per hour.
Calvert, Ala.	10	11:30 p. m.			10,000	Thundersquall	Many trees uprooted; damage to 15 houses and to several other buildings.
Millbrook, Ala.	11	1:30 a. m.			500	do	Buildings damaged over small area.
Halwee, Calif.	11-12	Entire day				Snow	Much damage to trees, and telephone and transmission lines.
Los Angeles, Calif., and vicinity.	11-14	12:01 a. m., of 11th-10 a. m., of 14th.		1		High wind, rain, hail and lightning.	Low areas flooded; some property damage from wind. Man swept into ocean while fishing off San Pedro breakwater.
Polson, Mont., and vicinity	18				30,000	Wind, sleet, and snow.	High wind caused large waves to rise on Flathead Lake, breaking a log boom, causing much damage to the mill, wrecking housings and weakening foundations. Valuable machinery severely damaged.
Seattle, Wash.	18					Snow	More than 6 inches of snow in some sections of city. Motorists stranded; transit system schedules upset; schools closed; and power and telephone service impaired. Power service on Mercer Island and in part of Renton and Rainier Valley blacked out in forenoon. Many telephones out of commission.
San Francisco, Calif., Bay district.	18-19					Wind and rain	Small property damage. Several deaths resulted from traffic accidents. Damage to trees and communication facilities from as far away as the central Sierra Nevada Mountains.
California, northern portion of State.	19				125,000	Rain and wind	Drenching rain brought welcome relief to parched farmlands and gloom to cities and suburban areas. Harassed by flooded streets, falling light and power sources, and stalled transportation, San Francisco took the brunt of gales and heavy rain. Worst blow befell the city's Grand National Livestock Exposition, where 4 huge tents collapsed upon a milling mass of over 1,000 prize animals, with \$125,000 loss. In San Francisco the heavy rain, 1.73 inches for the 24-hour period ending late on the 19th, disabled 32 streetcars. In addition, a mud slide continued to hold up streetcars, and a caved-in sewer caused the rerouting of car system.
Milwaukee, Wis.	21	P. m.				Wind and rain	Several windows broken; 2 chimneys blown over; porch damaged by falling tree; 8 persons injured in motor accidents.

¹ Miles instead of yards.

SOLAR RADIATION AND SUNSPOT DATA FOR NOVEMBER 1946

SOLAR RADIATION OBSERVATIONS

Explanations of the tables and references to descriptions of instruments, stations, and methods of observation, and to summaries of data, are given in the MONTHLY WEATHER REVIEW, vol. 72, No. 1, January 1944, p. 43. A list of pyrheliometric stations is also given on page 45 of the same issue.

Beginning with this issue, values of total solar and sky radiation received on a horizontal surface at Salt Lake City, Utah, will be included in table 2. These data are furnished through the courtesy of Dr. George R. Hill, Director of the Department of Agricultural Research of the American Smelting & Refining Co., and Dr. M. D. Thomas of the same laboratory. The instrumental equipment consists of an Eppley 10-junction pyrheliometer recording on a Leeds & Northrup Micromax potentiometer. The coordinates of the station are as follows: 40°46' N. latitude; 111°54' W. longitude; elevation of pyrheliometer, 4,305 feet. There is considerable atmospheric contamination during the colder months of the year; the station is in a valley ringed by the Wasatch Mountains and other ranges.

In the October 1946 issue of the REVIEW, vol. 74, No. 10, publication began of total solar and sky radiation data from the Central Sierra Snow Laboratory at Soda Springs, Calif. These values will be carried in table 2 henceforth. We are indebted for these data to Dr. Robert W. Gerdel, Technical Supervisor of the Cooperative Snow Investigations. The radiation equipment includes three Eppley 10-junction pyrheliometers recording on Leeds & Northrup Micromax potentiometers; two of the instruments are for special research work. The station is located at 39°20' N. latitude, 120°22' W. longitude, at an elevation of 6,903 feet. The skies are absolutely free of any man-made contamination. There is slight shading of the instrument by trees both early and late in the day, but adjustment is made for this in reduction of the records.

TABLE 1.—Solar radiation intensities during November 1946

(Gram calories per minute per square centimeter of normal surface)

Date	Sun's zenith distance										1:30 p. m.			
	7:30 a. m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°				
	75th mer. time	Air Mass										75th mer. time		
		A. M.					*1.0	P. M.						
		e	5.0	4.0	3.0	2.0		2.0	3.0	4.0			5.0	e
LINCOLN, NEBR.														
1946	mb.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mb.			
Nov. 12	3.7	0.81	0.90	1.09	1.24	1.24	1.13	0.81	0.68	0.77	6.1			
Nov. 13	5.3	0.70	0.83	1.03	1.20	1.15	1.01	0.81	0.68	0.77	6.4			
Nov. 14	4.4	0.70	0.83	0.96	1.11	1.09	0.81	0.56	0.43	0.53	9.8			
Nov. 15	7.8	0.92	1.01	1.14	1.11	0.88	0.70	0.70	0.70	0.70	11.0			
Nov. 16	5.1	0.92	1.01	1.14	1.11	0.88	0.70	0.70	0.70	0.70	4.2			
Nov. 18	3.8	0.83	0.96	1.09	1.09	1.07	0.94	0.81	0.81	0.81	4.8			
Nov. 19	6.1	0.83	0.96	1.09	1.09	1.07	0.94	0.81	0.81	0.81	6.1			
Nov. 20	6.6	0.83	0.96	1.09	1.09	1.07	0.94	0.81	0.81	0.81	10.2			
Nov. 23	3.8	0.92	1.03	1.16	1.16	1.18	1.01	0.89	0.53	0.53	5.3			
Nov. 27	5.6	0.84	0.94	1.08	1.18	1.17	1.02	0.83	0.73	0.73	5.3			
Means		0.84	0.94	1.08	1.18	1.17	1.02	0.83	0.73	0.73				
Departures		-0.05	-0.16	-0.08	-0.17	-0.16	-0.15	-0.19	-0.18	-0.18				
BLUE HILL, MASS.														
Nov. 1	6.5	0.95	1.03	1.27	1.40	1.30	1.12	1.01	0.90	0.90	5.8			
Nov. 5	3.7	1.08	1.16	1.27	1.40	1.43	1.26	1.15	1.06	1.06	2.6			
Nov. 6	3.8	1.06	1.13	1.42	1.42	1.38	1.19	1.07	0.97	0.97	3.5			
Nov. 9	8.1	0.69	0.80	0.96	0.96	0.96	0.96	0.96	0.96	0.96	9.0			
Nov. 10	7.9	0.79	0.90	1.03	1.03	1.03	1.03	1.03	1.03	1.03	8.9			
Nov. 12	10.8	0.93	1.02	1.15	1.28	1.27	1.07	1.00	0.92	0.92	6.5			
Nov. 13	4.9	0.90	1.01	1.15	1.15	1.16	1.09	0.99	0.99	0.99	5.1			
Nov. 14	5.0	0.64	0.73	0.83	0.83	0.83	0.83	0.83	0.83	0.83	6.2			

See footnote at end of table.

TABLE 1.—Solar radiation intensities during November 1946—Continued

Date	Sun's zenith distance										1:30 p. m.
	7:30 a. m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	
	75th mer. time	Air Mass									75th mer. time
		A. M.				*1.0	P. M.				
		e	5.0	4.0	3.0		2.0	3.0	4.0	5.0		e
BLUE HILL, MASS.—Continued											
1946	mb.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mb.
Nov. 15	4.2							1.09	.99	.93	5.2
Nov. 16	4.0	1.05	1.14	1.24				1.19	1.09	.99	8.3
Nov. 18	3.7								.98	.87	3.3
Nov. 19	4.4	.82	.95	1.09				1.13	1.02	.90	2.9
Nov. 23	3.0	.99	1.10	1.20							2.5
Nov. 27	7.3			1.30	1.43						0.6
Nov. 28	4.0	1.00	1.12					1.23	1.12	1.01	3.8
Means		.91	1.03	1.13	1.38		1.34	1.16	1.05	.95	
Departures		.00	+ .02	.00	+ .11		+ .08	+ .06	+ .08	+ .10	

TABLE MOUNTAIN, CALIF.

Nov. 1					1.47						
Nov. 2					1.50						
Nov. 3					1.52						
Nov. 4					1.46						
Nov. 5					1.49						
Nov. 9					1.51						
Nov. 10					1.52						
Nov. 15					1.52						
Nov. 16					1.50						
Nov. 17					1.48						
Nov. 24					1.52						
Nov. 25					1.51						
Nov. 26		1.15	1.23	1.34	1.47						
Nov. 27					1.50						
Nov. 28					1.51						
Nov. 29					1.50						
Nov. 30					1.48						
Means		(1.15)	(1.23)	(1.24)	1.50						

CLIMAX, COLO.

Nov. 1				1.38	1.45	1.57		1.56	1.43	1.31	1.23	
Nov. 5								1.48	1.32	1.18		
Nov. 7		1.23	1.32	1.43								
Nov. 10		1.07	1.21	1.38	1.52			1.40		1.21	1.10	
Nov. 11		1.26	1.35	1.43	1.46			1.53	1.32			
Nov. 12		1.21	1.31	1.42	1.53			1.44	1.34	1.24	1.12	
Nov. 13		1.25	1.34	1.46	1.58			1.56	1.40	1.30	1.20	
Nov. 14		1.22	1.30	1.40	1.50			1.37				
Nov. 16			1.33	1.47	1.57			1.58	1.39			
Nov. 17		1.20	1.32	1.44	1.56			1.54	1.40	1.30	1.21	
Nov. 18		1.24	1.34	1.44				1.54	1.40	1.34	1.17	
Nov. 19		1.04	1.14	1.21	1.45			1.52	1.36	1.28	1.09	
Nov. 20				1.42								
Nov. 22		1.19	1.28	1.38					1.36	1.16	0.80	
Nov. 25		1.30	1.41	1.49	1.61				1.41	1.26	1.17	
Nov. 26					1.50				1.30			
Nov. 27		1.20	1.29	1.40	1.50				1.34	1.16		
Nov. 28		1.24	1.33	1.43	1.52				1.40	1.25	1.18	
Nov. 29		1.25	1.37	1.44	1.56				1.44	1.32	1.21	
Nov. 30		1.23	1.32	1.45	1.52				1.34	1.28	1.20	
Means		1.21	1.31	1.42	1.53			1.50	1.37	1.26	1.14	

BOSTON, MASS.

Nov. 5	4.0			1.16	1.35							3.3
Nov. 6	4.0			1.04	1.29				1.18	1.04	0.92	3.8
Nov. 12	11.8								1.08	0.95	0.79	7.8
Nov. 13	5.3			1.04	1.11				1.10	0.77	0.67	5.1
Nov. 14	5.3			1.00								6.9
Nov. 19	3.8	0.50	0.55									6.4
Means		(0.50)	(0.55)	1.06	1.25				1.12	0.92	0.79	
Departures		-0.17	-0.19	+0.09	+0.10				+0.12	+0.04	+0.03	

RATIO, BOSTON/BLUE HILL, ON COMPARABLE DATES

	(0.61)	(0.58)	0.96	(0.94)			0.98	0.88	0.82		
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LATE DATA FOR OCTOBER 1946

MADISON, WIS.

Oct. 1	5.8	0.83	0.98	1.11	1.25	1.48					6.9
Oct. 2	7.4	0.61	0.75	0.92	1.13	1.54					8.7
Oct. 4	9.8	0.58	0.70	0.84	1.07	1.35					13.2
Oct. 15	8.1	0.76	0.81	0.99	1.16	1.33					12.5
Oct. 21	8.1	0.76	0.84	0.98	1.15	1.30					9.4
Oct. 22	9.8			0.66	0.84						13.7
Oct. 23	7.4	0.49	0.71	0.90							12.7
Oct. 25	7.8	0.90	0.98	1.11	1.31	1.51					8.1
Means		0.70	0.82	0.94	1.13	1.42					
Departures		-0.04	-0.05	-0.08	-0.06	-0.01					

*Extrapolated.

TABLE 2.—Daily totals and weekly means of solar radiation (direct+diffuse) received on a horizontal surface

[Gram calories per square centimeter]

Date	Washington, D. C.	Madison, Wis.	Lincoln, Nebr.	East Lansing, Mich.	New York, N. Y.	Fresno, Calif.	Columbia, Mo.	Boston, Mass.	Nashville, Tenn.	Twin Falls, Idaho	La Jolla, Calif.	Riverside, Calif.	Blue Hill, Mass.	Newport, R. I.	State College, Pa.	Put-in-Bay, Ohio	Salt Lake City, Utah	Davis, Calif.	Tooele, Utah	Toronto, Canada	Ithaca, N. Y.	Boulder, Colo.	Soda Springs, Calif.
1946	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.
Oct. 29	296	196	222	49	166	389	373	112	297	277	363	303	153	126	185	182	189	372	256	82	256	321	366
Oct. 30	290	200	349	88	193	381	36	116	282	109	359	401	181	218	278	265	456	352	278	194	278	337	226
Oct. 31	336	209	251	64	202	368	57	164	255	308	352	366	231	249	110	88	420	362	378	82	271	389	
Nov. 1	151	25	192	25	251	361	55	255	251	194	340	377	304	283	104	46	102	373	198	107	364	287	
Nov. 2	188	47	64	91	56	364	23	25	248	310	335	323	64	63	155	42	439	355	369	24	18		
Nov. 3	96	48	174	17	64	374	42	29	250	281	355	419	76	88	183	174	456	356	375	30	125	376	
Nov. 4	214	267	214	176	52	364	228	123	95	289	351	381	165	193	123	140	391	324	360	223	158	365	
Means	225	136	210	78	145	372	102	115	240	243	351	373	168	174	163	130	351	350	320	106	228	353	
Departures	-20	-48	-23	-60	-63	+46	-130	-40	+7	+33	+7	+60	-46	-48	-27	-69	-----	+63	+49	-38	-----	-42	
Nov. 5	337	262	127	238	294	340	175	253	263	278	352	370	313	295	343	296	397	283	374	240	328	319	
Nov. 6	314	172	82	224	280	262	36	239	103	212	325	350	296	304	294	235	372	136	327	241	270	173	
Nov. 7	106	87	60	27	99	186	60	203	110	52	212	304	272	238	71	22	57	282	110	42	260	51	
Nov. 8	251	59	208	10	129	312	122	5	300	130	296	343	45	46	100	22	61	330	43	53	154	69	344
Nov. 9	201	79	11	56	142	320	48	91	305	290	296	362	131	189	30	51	229	305	212	80	39	133	344
Nov. 10	271	54	154	25	134	315	139	160	14	102	318	355	208	210	104	41	398	325	363	33	49	375	306
Nov. 11	67	35	308	26	67	127	124	13	88	204	212	167	40	94	62	34	316	314	283	27	11	317	269
Means	221	107	128	86	164	266	100	138	165	177	283	322	186	197	143	100	202	282	244	102	62	251	258
Departures	0	-53	-94	-26	-18	-24	-81	+3	-10	-27	-26	+24	+2	-2	+5	-26	-----	+27	+8	-14	-74	-5	
Nov. 12	228	240	299	186	239	233	337	196	188	236	97	54	248	243	88	239	311	284	220	183	61	316	169
Nov. 13	273	244	287	174	253	82	292	202	246	104	89	50	270	280	204	246	84	82	95	90	73	309	173
Nov. 14	276	244	285	209	147	307	322	104	246	31	242	246	175	201	100	238	274	161	116	145	69	285	100
Nov. 15	315	167	123	194	259	261	137	180	276	252	313	358	219	259	278	249	112	243	302	210	253	134	316
Nov. 16	245	21	284	22	201	258	50	170	36	223	319	344	270	263	182	60	311	105	293	69	176	194	220
Nov. 17	49	249	291	224	20	98	353	35	61	144	327	352	63	95	27	274	314	218	304	228	44	394	207
Nov. 18	309	200	284	188	222	140	315	153	296	35	330	322	202	128	286	227	254	32	245	192	220	329	42
Means	242	195	262	171	192	197	258	149	193	146	244	246	207	209	166	219	237	161	225	160	127	269	175
Departures	+40	+41	+51	+64	+41	-48	+74	+30	-18	-17	-44	-28	+47	+26	0	+65	-----	-32	+8	+56	+13	+23	
Nov. 19	286	228	266	197	139	11	296	150	264	118	239	290	230	237	280	241	61	33	66	135	192	254	
Nov. 20	261	89	249	41	132	148	288	154	92	122	74	58	220	211	206	227	69	216	111	154	196	242	
Nov. 21	258	94	270	142	164	229	74	85	76	182	298	319	156	210	197	225	160	88	200	50	207	291	183
Nov. 22	162	223	227	69	19	92	270	4	290	70	79	270	24	46	213	131	235	55	201	51	133	294	
Nov. 23	264	114	176	153	120	171	229	132	255	66	74	54	186	215	194	190	15	280	36	89	174	253	
Nov. 24	262	21	82	25	154	286	42	109	257	144	298	344	172	179	197	112	106	288	214	109	89	41	268
Nov. 25	207	88	222	26	108	280	21	74	181	140	320	331	102	90	42	20	338	224	285	10	50	280	169
Means	243	112	213	90	119	174	175	101	202	120	198	237	159	170	190	164	140	169	159	87	149	226	
Departures	+57	-18	+17	-9	-22	-58	+8	-5	+21	-37	-90	-40	+9	+9	+53	+40	-----	-43	-46	-2	+27	+15	
Nov. 26	154	222	261	117	39	280	287	70	30	50	294	319	98	47	47	23	108	231	237	29	20	201	244
Nov. 27	192	227	254	138	187	282	286	166	196	111	292	311	218	216	228	104	223	241	203	50	149	230	266
Nov. 28	280	180	235	88	219	235	272	112	288	102	275	303	176	193	213	71	234	251	232	35	150	220	276
Nov. 29	249	67	160	160	128	48	259	94	255	93	247	308	150	146	171	230	264	232	282	178	102	174	276
Nov. 30	191	120	145	76	117	113	253	54	250	181	113	280	112	100	181	146	287	48	86	77	109	154	273
Dec. 1	111	108	149	59	58	106	-----	39	80	87	68	-----	81	69	45	32	147	103	168	89	21	230	
Dec. 2	281	167	189	157	236	51	-----	83	293	170	162	-----	128	202	253	229	251	162	158	182	103	200	
Means	208	169	199	118	141	150	-----	88	199	114	207	-----	138	139	163	119	216	181	195	93	93	202	
Departures	+41	+45	+20	+29	+13	-44	-----	-10	+50	-30	-58	-----	-11	-16	+37	+18	-----	+12	-6	+9	+3	+1	

ACCUMULATED DEPARTURES ON DEC. 2, 1946

+5,264	+4,417	-2,891	+3,080	-10,101	+4,830	-----	+609	+1,778	-5,838	-----	-2,212	-2,835	+6,009	-----	+11,838	-1,491	-----	+1,554	-----				
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ADDITIONAL DATA FOR MADISON, WIS., FOR OCTOBER 1946

Week beginning	Means	Departures
Oct. 1	362	+109
Oct. 8	226	-29
Oct. 15	234	+3
Oct. 22	208	-10

Accumulated departures on Oct. 28, 1946, +4648

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR
NOVEMBER 1946POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR
NOVEMBER 1946—Continued

By Lucy T. Day

[Equatorial Division, U. S. Naval Observatory]

[Communicated by the Superintendent, U. S. Naval Observatory.] All measurements and spot counts were made at the Naval Observatory from plates taken at the observatories indicated. Difference in longitude is measured from the central meridian, positive toward the west. Latitude is positive toward the north. Areas are corrected for foreshortening and expressed in millionths of Sun's hemisphere. For each day under Mount Wilson group number, longitude, latitude, area of spot or group, and spot count, are included respectively: number of groups, assumed longitude of center of the disk, assumed latitude of center of the disk, total area of spots and groups, and total spot count.

Date	East- ern stand- ard time	Mount Wilson group No.	Heliographic	Area of spot or group	Spot count	Plate qual- ity	Observatory
			Dif- fer- ence in longi- tude	Lon- gi- tude	Lat- i- tude	Dis- tance from cen- ter of disk	
1946 Nov. 1	h m		°	°	°	°	
	12 49	8262	-68	276	-20	71	24
		8260	-37	307	+33	45	24
		8260	-34	310	+30	42	136
		8261	-26	318	+25	33	12
		8259	-4	340	+10	7	12
		8261	+10	3	-31	39	61
		8261	+20	4	-29	38	12
		8253	+20	4	-15	27	121
		8253	+25	9	-15	31	194
		8261	+25	9	-25	38	97
		8258	+39	23	+11	46	12
		8254	+45	29	+15	46	12
		8251	+56	40	-11	58	61
		8251	+57	41	-8	58	48
		8251	+73	57	-9	73	242
		(9)	(344)	(+4)			968
							43
2	11 45	8262	-61	271	-20	65	24
		8262	-55	277	-21	60	97
		8260	-18	314	+27	25	24
		8261	+31	3	-32	46	48
		8253	+34	6	-15	39	73
		8253	+39	11	-15	42	194
		8261	+40	12	-26	49	73
		8254	+60	32	+13	60	6
		8251	+70	42	-12	71	121
		8251	+71	43	-8	70	97
		(6)	(332)	(+4)			757
							22
3	12 15	8262	-42	276	-20	48	121
		8260	-14	304	+16	19	12
		8260	-5	313	+27	24	24
		8261	+41	359	-31	52	24
		8254	+48	6	-14	51	218
		8261	+50	8	-23	56	48
		(5)	(318)	(+4)			447
4	10 38	8264	-75	231	-24	77	194
		8263	-64	242	-30	70	48
		8262	-35	271	-22	42	97
		8262	-33	273	-17	39	12
		8262	-27	279	-21	36	121
		8260	+5	311	+27	23	12
		8260	+7	313	+27	24	12
		8253	+60	6	-15	62	61
		8261	+60	6	-30	67	48
		8261	+63	9	-28	69	48
		8253	+65	11	-15	62	170
		(6)	(306)	(+4)			823
							32
5	10 45	8266	-88	205	-32	88	97
		8266	-80	213	+10	80	97
		8266	-71	222	+12	71	48
		8266	-71	222	+16	71	48
		8265	-70	223	+17	70	73
		8264	-61	232	-24	66	194
		8263	-55	238	-30	64	48
		8263	-50	243	-29	59	12
		8262	-20	273	-22	32	48
		8262	-15	278	-22	29	61
		8262	-11	282	-21	27	73
		8260	+22	315	+27	31	24
		8253	+73	6	-16	75	48
		8253	+79	12	-15	80	145
		(8)	(293)	(+4)			1,016
6	11 54	8266	-79	200	+11	79	242
		8271	-70	203	-12	77	291
		8270	-68	211	+18	68	48
		8266	-67	212	+11	67	170
		8265	-57	222	+16	57	121
		8264	-47	232	-22	53	194
		8263	-42	237	-29	52	24
		8263	-36	243	-27	47	48

See footnotes at end of table.

Date	East- ern stand- ard time	Mount Wilson group No.	Heliographic	Area of spot or group	Spot count	Plate qual- ity	Observatory
			Dif- fer- ence in longi- tude	Lon- gi- tude	Lat- i- tude	Dis- tance from cen- ter of disk	
1946	h m		°	°	°	°	
Nov. 6	11 54	8269	-35	244	-15	39	48
		8262	-7	272	-20	25	194
		8262	-2	277	-21	25	145
		8262	+1	280	-21	25	97
		8262	+3	282	-18	23	48
		8260	+35	314	+27	41	12
		8268	+36	315	+21	39	6
		8267	+60	339	+11	60	97
		8267	+65	344	+10	65	194
		(11)	(279)	(+4)			1,079
							46
7	12 20	8272	-85	180	+16	85	97
		8266	-62	203	+10	62	145
		8271	-60	205	-13	62	145
		8270	-54	211	+18	55	48
		8266	-51	214	+11	52	218
		8265	-43	222	+16	45	97
		8264	-34	231	-23	42	170
		8263	-28	237	-29	42	12
		8263	-23	242	-28	40	36
		8269	-22	243	-16	29	24
		8262	+10	275	-21	26	97
		8262	+17	282	-20	28	242
		8260	+50	315	+27	53	12
		8267	+77	342	+10	77	242
		(11)	(265)	(+4)			1,585
							51
8	11 30	8272	-73	180	+15	73	97
		8266	-51	202	+11	52	206
		8271	-49	204	-12	51	158
		8266	-47	206	+11	48	145
		8266	-40	213	+11	41	61
		8270	-40	213	+19	42	61
		8266	-38	215	+13	39	12
		8265	-30	223	+15	32	73
		8264	-21	232	-22	33	145
		8263	-18	235	-30	38	12
		8263	-10	243	-29	34	36
		8269	-9	244	-17	23	12
		8262	+19	272	-22	32	61
		8262	+23	276	-21	34	48
		8262	+30	283	-21	38	97
		8260	+64	317	+27	65	6
		(10)	(253)	(+4)			1,230
							41
9	11 30	8275	-85	154	+30	85	73
		8274	-80	159	-15	80	97
		8272	-57	182	+15	58	194
		8266	-37	202	+10	38	194
		8266	-33	206	+11	34	121
		8271	-33	206	-12	36	194
		8266	-30	209	+9	31	73
		8266	-26	213	+10	27	73
		8270	-26	213	+18	30	12
		8265	-16	223	+15	20	48
		8264	-8	231	-24	29	194
		8273	-7	232	+10	9	12
		8263	0	239	-30	34	12
		8263	+3	242	-28	32	12
		8262	+33	272	-22	41	48
		8262	+38	277	-21	45	12
		8262	+45	284	-21	51	73
		8260	+73	312	+28	74	6
		(12)	(236)	(+4)			1,448
							61
10	13 16	8278	-87	133	-19	87	97
		8275	-73	152	+28	73	48
		8275	-70	155	+30	70	97
		8274	-66	159	-15	68	145
		8277	-60	165	-20	63	24
		8277	-54	171	-18	58	24
		8272	-45	180	+16	46	48
		8272	-42	183	+15	44	194
		8266	-22	203	+10	23	242
		8266	-20	205	+11	22	121
		8271	-19	206	-12	24	194
		8266	-14	211	+9	15	48
		8266	-12	213	+10	14	97
		8270	-12	213	+17	19	12
		8265	-3	222	+15	12	61
		8264	+7	232	-24	29	194
		8273	+8	233	+11	11	24
		8262	+46	271	-23	51	61
		8262	+52	277	-21	57	73
		8262	+55	280	-20	60	97
		8262	+60	285	-22	64	97
		8276	+80	305	-18	80	24
		(13)	(225)	(+8)			2,022
							68

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR
NOVEMBER 1946—ContinuedPOSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR
NOVEMBER 1946—Continued

Date	East- ern stand- ard time	Mount Wilson group No.	Heliographic	Area of spot or group	Spot count	Plate qual- ity	Observatory
			Dif- ference in longi- tude	Longi- tude	Lat- tude	Dis- tance from center of disk	
1946 Nov. 12	A m 11 32	8281	-68	132	+20	69	97
		8278	-58	142	-20	61	97
		8274	-41	159	-15	44	145
		8280	-40	160	+12	40	97
		8277	-30	170	-19	37	121
		8277	-25	175	-18	32	170
		8272	-17	183	+14	20	145
		8272	-15	185	+14	18	158
		8266	+2	202	+10	7	291
		8266	+8	208	+10	11	97
		8271	+8	208	-12	17	121
		8266	+14	214	+9	15	97
		8264	+32	232	-24	41	194
		8264	+34	234	-25	42	61
		8262	+61	261	-23	65	12
		8262	+76	276	-21	78	97
		(10)	(200)	(+3)		2,000	69
13	10 22	8281	-55	132	+20	56	73
		8278	-44	143	-21	50	73
		8274	-30	157	-15	35	109
		8280	-29	158	+12	30	73
		8280	-25	162	+12	27	73
		8277	-17	170	-19	28	267
		8277	-11	176	-18	23	291
		8272	-7	180	+14	13	97
		8272	-3	184	+12	10	97
		8272	-3	184	+13	11	109
		8266	+15	202	+10	17	291
		8266	+20	207	+11	21	73
		8271	+21	208	-12	26	121
		8266	+26	213	+9	27	48
		8264	+45	232	-24	82	194
		8264	+48	235	-24	54	24
		(9)	(187)	(+3)		2,013	53
14	11 13	8283	-81	93	+23	81	48
		8281	-42	132	+20	44	61
		8278	-31	143	-21	38	61
		8274	-16	156	-15	24	97
		8280	-15	159	+12	17	73
		8274	-12	162	-17	23	6
		8280	-10	164	+11	12	145
		8277	-4	170	-20	23	242
		8277	+3	177	-19	22	242
		8272	+3	177	+17	14	24
		8272	+10	184	+12	13	145
		8272	+12	186	+14	16	145
		8272	+14	188	+13	17	24
		8266	+28	202	+9	29	24
		8266	+30	204	+10	31	218
		8271	+34	208	-12	36	121
		8266	+35	209	+10	35	48
		8266	+39	213	+9	39	36
		8264	+59	233	-24	62	339
		8264	+61	235	-24	66	48
		(11)	(174)	(+3)		2,147	73
15	10 26	8283	-73	88	+21	73	194
		8282	-70	91	-9	70	73
		8283	-69	92	+22	69	145
		8281	-30	131	+20	33	61
		8278	-19	142	-21	31	48
		8274	-3	158	-15	18	145
		8280	-3	158	+12	9	121
		8280	+3	164	+12	9	194
		8280	+3	164	+11	8	48
		8277	+8	169	-20	24	145
		8277	+15	176	-19	27	24
		8277	+18	179	-18	28	242
		8272	+21	182	+12	22	61
		8272	+25	186	+13	27	97
		8266	+41	202	+10	41	170
		8266	+46	207	+10	46	12
		8271	+47	208	-12	48	97
		8279	+71	232	-24	76	339
		8279	+78	239	-25	80	242
		8264	+81	242	-23	82	48
		(12)	(161)	(+3)		2,506	60
16	10 26	8283	-60	88	+21	61	121
		8283	-59	89	+22	60	194
		8282	-56	92	-9	58	145
		8281	-18	130	+20	24	61

See footnotes at end of table.

Date	East- ern stand- ard time	Mount Wilson group No.	Heliographic	Area of spot or group	Spot count	Plate qual- ity	Observatory
			Dif- ference in longi- tude	Longi- tude	Lat- tude	Dis- tance from center of disk	
1946 Nov. 16	A m 10 26	8278	-5	143	-21	24	61
		8274	+11	159	-13	21	97
		8274	+12	160	-16	22	24
		8280	+12	160	+13	16	121
		8280	+15	163	+13	18	48
		8280	+17	165	+12	19	194
		8277	+23	170	-21	32	145
		8277	+31	179	-18	37	291
		8272	+37	183	+14	38	24
		8272	+39	187	+14	40	73
		8272	+42	190	+12	42	48
		8266	+58	206	+11	58	97
		8271	+61	209	-12	64	97
		(10)	(148)	(+3)		1,841	55
17	12 10	8286	-78	56	-6	78	12
		8283	-46	88	+23	48	145
		8282	-41	93	-8	43	121
		8285	-6	128	-22	25	48
		8281	-4	130	+22	19	48
		8278	+8	142	-19	23	48
		8284	+16	150	+31	32	24
		8274	+27	161	-14	32	145
		8280	+32	166	+13	33	242
		8277	+45	179	-15	48	388
		8272	+53	187	+16	55	170
		8266	+72	206	+12	72	24
		8271	+74	208	-11	74	48
		(13)	(134)	(+3)		1,463	
18	10 55	8288	-77	44	+15	77	145
		8286	-65	56	-6	65	61
		8283	-33	88	+21	37	97
		8283	-32	89	+24	38	24
		8283	-31	90	+22	36	170
		8282	-27	94	-9	29	121
		8285	+8	129	-23	26	48
		8281	+0	130	+20	20	48
		8287	+19	140	+12	21	97
		8278	+19	140	-21	30	24
		8284	+28	149	+28	37	24
		8284	+36	157	+11	37	12
		8274	+37	158	-16	40	121
		8274	+41	162	-16	43	194
		8280	+46	166	+11	46	194
		8277	+47	168	-20	51	24
		8277	+55	176	-17	59	339
		8272	+64	185	+14	65	170
		(13)	(121)	(+2)		1,913	57
19	10 55	8290	-75	33	+11	75	242
		8288	-62	46	+15	63	97
		8286	-51	57	-6	52	61
		8283	-21	87	+21	28	61
		8283	-19	89	+23	28	145
		8282	-17	91	-11	22	121
		8282	-14	94	-9	18	97
		8285	+21	129	-23	32	48
		8281	+22	130	+20	28	48
		8287	+33	141	+10	34	73
		8278	+33	141	-21	39	24
		8274	+53	161	-16	56	242
		8280	+58	166	+11	58	194
		8277	+69	177	-18	71	339
		8272	+78	186	+14	78	121
		(13)	(108)	(+2)		1,913	33
20	10 30	8290	-70	25	+15	71	24
		8290	-61	34	+11	62	291
		(*)	-50	45	-11	51	34
		8288	-49	46	+13	50	145
		8286	-38	57	-7	50	61
		8283	-7	88	+20	19	145
		8282	-3	92	-11	13	207
		8281	+35	130	+19	38	48
		8285	+36	131	-25	43	24
		8287	+45	140	+10	46	97
		8274	+65	160	-16	67	73
		8274	+66	161	-17	68	24
		8274	+70	165	-18	72	194
		8280	+71	166	+11	71	242
		8277	+88	184	-18	89	242
		(12)	(95)	(+2)		1,901	38

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR
NOVEMBER 1946—ContinuedPOSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR
NOVEMBER 1946—Continued

Date	East- ern stand- ard time	Mount Wilson group No.	Heliographic	Area of spot or group	Spot count	Plate qual- ity	Observatory
			Dif- ference in longi- tude	Longi- tude	Lat- tude	Dis- tance from center of disk	
1946 Nov. 21	A m		°	°	°	°	
	10 0	8291	-75	6	-13	77	48
		8292	-76	6	-23	78	73
		8290	-50	32	+11	51	315
		8290	-45	37	+11	46	170
		8288	-43	39	+11	44	24
		8288	-37	45	+13	39	194
		8288	-32	50	+14	33	242
		8286	-25	57	-7	30	48
		8283	+6	88	+23	22	6
		8283	+7	89	+21	20	194
		8282	+12	94	-11	18	242
		8282	+15	97	-12	20	145
		8281	+47	129	+19	48	24
		8285	+48	130	-23	52	12
		8287	+59	141	+10	59	194
		8274	+78	160	-18	79	97
		8274	+80	162	-18	80	194
		(11)	(82)	(+2)			2,222
22	10 15	8294	-69	0	-30	72	6
		8291	-69	0	-12	70	12
		8291	-61	8	-13	63	48
		8292	-60	9	-23	64	73
		8293	-47	22	-10	48	48
		8290	-37	32	+12	38	315
		8290	-30	39	+11	31	194
		8288	-23	46	+13	25	291
		8288	-19	50	+13	22	436
		8286	-11	58	-7	15	48
		8283	+20	89	+21	27	194
		8282	+25	94	-11	28	339
		8282	+31	100	-11	33	218
		8287	+71	140	+11	71	121
		8287	+74	143	+10	74	388
		(10)	(69)	(+2)			2,731
23	9 56	8291	-55	1	-12	56	24
		8292	-48	8	-13	50	48
		8293	-34	22	-10	35	109
		8290	-24	32	+11	25	364
		8290	-15	41	+11	18	121
		8288	-10	46	+13	15	776
		8288	-4	52	+13	12	630
		8286	+3	59	-7	10	48
		8283	+32	88	+21	36	121
		8282	+36	94	-11	41	388
		8282	+44	100	-11	46	194
		(8)	(56)	(+2)			2,896
24	11 26	8291	-35	7	-13	38	36
		8292	-32	10	-23	39	24
		8293	-20	22	-10	23	73
		8293	-17	25	-10	21	48
		8290	-10	32	+12	14	242
		8290	-4	38	+12	10	73
		8288	+3	45	+13	12	388
		8288	+7	49	+13	13	630
		8288	+12	54	+12	16	630
		8286	+18	60	-8	21	24
		8283	+47	89	+22	50	194
		8282	+55	97	-11	56	679
		(8)	(42)	(+2)			3,041
25	12 10	8295	-80	308	-17	80	145
		8292	-23	5	-23	33	36
		8291	-21	7	-13	26	24
		8293	-6	22	-10	13	97
		8290	+3	31	+11	9	218
		8290	+9	37	+11	13	73
		8288	+14	42	+12	17	388
		8288	+19	47	+12	21	630
		8288	+23	51	+12	25	679
		8283	+59	87	+22	60	194
		8282	+67	95	-11	68	727
		(8)	(28)	(+2)			3,211
26	10 19	8295	-86	310	-17	68	194
		8291	-9	7	-13	16	24
		8293	+7	23	-11	14	61
		8293	+12	28	-12	17	61
		8290	+17	33	+10	19	145
		8288	+28	44	+11	30	291
		8288	+32	48	+12	34	533
		8288	+35	51	+12	37	485
		8288	+36	52	+10	38	170
		8283	+71	87	+20	72	194
		8282	+80	96	-12	80	582
		(7)	(16)	(+1)			2,740

Date	East- ern stand- ard time	Mount Wilson group No.	Heliographic	Area of spot or group	Spot count	Plate qual- ity	Observatory
			Dif- ference in longi- tude	Longi- tude	Lat- tude	Dis- tance from center of disk	
1946 Nov. 27	A m		°	°	°	°	
	11 23	8298	-80	282	-20	80	194
		8297	-79	283	+19	79	97
		8295	-50	312	-17	53	121
		8291	+4	6	-11	13	12
		8296	+13	15	-23	28	12
		8293	+21	23	-11	24	73
		8293	+28	30	-12	31	48
		8290	+30	32	+10	31	121
		8288	+40	42	+11	41	291
		8288	+46	48	+12	47	339
		8288	+49	51	+10	50	436
		8288	+52	54	+10	53	97
		(8)	(2)	(+1)			1,841
28	10 52	8298	-69	280	-21	70	194
		8297	-66	283	+17	66	97
		8299	-39	310	+17	41	12
		8295	-38	311	-17	42	145
		8293	+35	24	-11	36	73
		8293	+42	31	-11	43	61
		8290	+43	32	+12	44	121
		8288	+55	44	+13	56	218
		8288	+57	46	+10	57	145
		8288	+62	51	+12	62	194
		8288	+65	54	+15	65	339
		8288	+70	59	+13	70	48
		(7)	(349)	(+1)			1,647
29	10 10	8298	-56	281	-21	58	145
		8297	-61	286	+17	53	61
		8301	-49	288	-36	57	12
		8295	-26	311	-18	32	145
		8299	-25	312	+17	29	73
		8293	+46	23	-11	48	61
		8293	+52	29	-11	54	48
		8290	+56	33	+12	57	97
		8288	+68	45	+12	68	194
		8288	+69	46	+9	69	145
		8288	+75	52	+12	75	364
		8288	+81	58	+10	81	48
		(8)	(337)	(+1)			1,363
30	10 58	8302	-78	245	+24	78	97
		8298	-47	276	-21	51	24
		8298	-42	281	-20	46	121
		8297	-38	285	+17	41	73
		8301	-37	286	-35	50	12
		8295	-11	312	-17	22	97
		8299	-10	313	+17	18	48
		(*)	+37	0	-32	48	6
		8300	+57	20	-14	59	24
		8293	+60	23	-10	60	24
		8293	+66	29	-10	66	24
		8290	+71	34	+19	71	48
		8288	+80	43	+16	80	242
		8288	+81	44	+13	81	194
		8288	+88	51	+10	88	97
		(11)	(323)	(+1)			1,131

Mean daily area for 29 days=1,822

Mean 10 g+s for 27 days=152.11

* Not numbered

† Data from Mount Wilson charts

VG=very good; G=good; F=fair; P=poor.

PROVISIONAL RELATIVE SUNSPOT NUMBERS FOR
NOVEMBER 1946

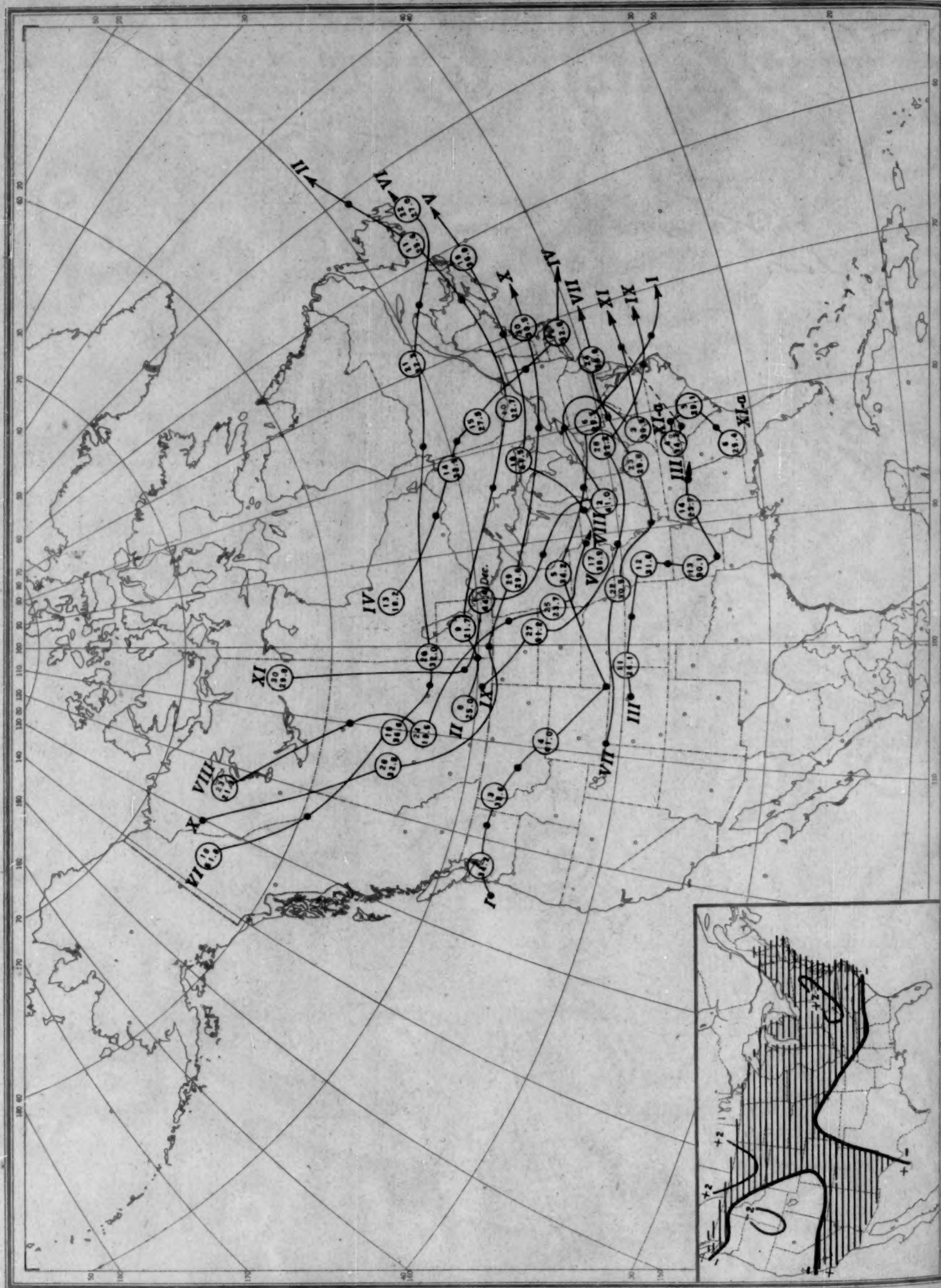
[Dependent on observations at Zurich Observatory and its stations at Locarno and Arosa]

November 1946	Relative numbers	November 1946	Relative numbers	November 1946	Relative numbers
1.....	95	11.....	138	21.....	141
2.....	88	12.....	169	22.....	124
3.....	85	13.....	131	23.....	153
4.....	59	14.....	167	24.....	140
5.....	88	15.....	145	25.....	138
6.....	121	16.....	140	26.....	127
7.....	125	17.....	159	27.....	116
8.....	126	18.....	154	28.....	102
9.....	128	19.....	166	29.....	84
10.....	130	20.....	141	30.....	69

Mean, 30 days=125.0

Chart I. Departure ($^{\circ}\text{F}$) of the Mean Temperature from the Normal, and Wind Roses for Selected Stations, November 1946

Chart II. Tracks of Centers of Anticyclones, November 1946. (Inset) Departure of Monthly Mean Pressure from Normal

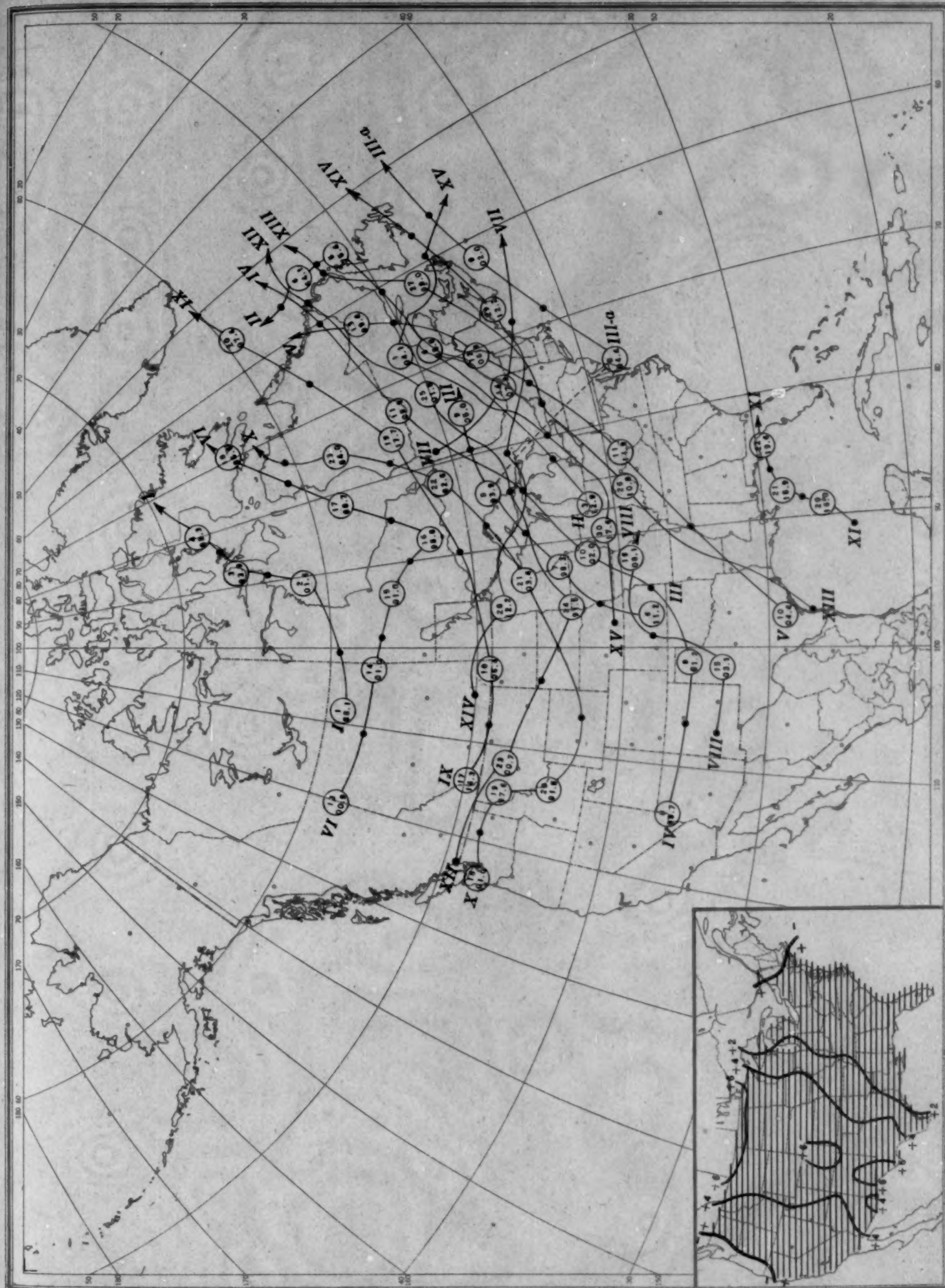


Circle indicates position of anticyclone at 7:30 a. m. (76th meridian time), with barometric reading. Dot indicates position of anticyclone at 7:30 p. m. (75th meridian time)

Chart III. Tracks of Centers of Cyclones, November 1946. (Inset) Change in Mean Pressure from Preceding Month

Circle indicates position of anticyclone at 7:30 a. m. (75th meridian time), with barometric reading. Dot indicates position of anticyclone at 7:30 p. m. (75th meridian time)

Chart III. Tracks of Centers of Cyclones, November 1946. (Inset) Change in Mean Pressure from Preceding Month



Circle indicates position of cyclone at 7:30 a. m. (75th meridian time), with barometric reading. Dot indicates position of cyclone at 7:30 p. m. (75th meridian time)

Chart V. Total Precipitation, Inches, November 1946. (Inset) Departure of Precipitation from Normal

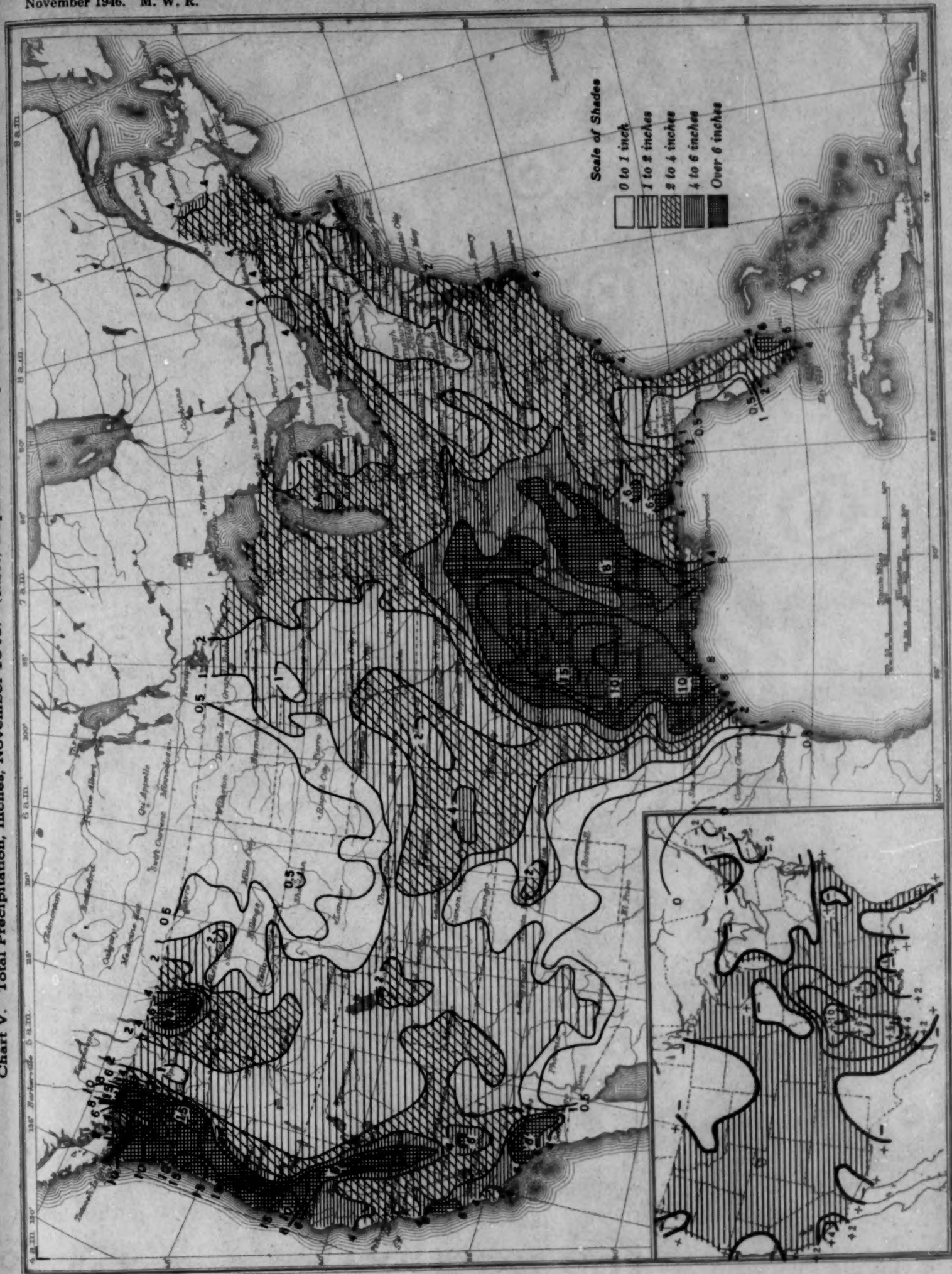


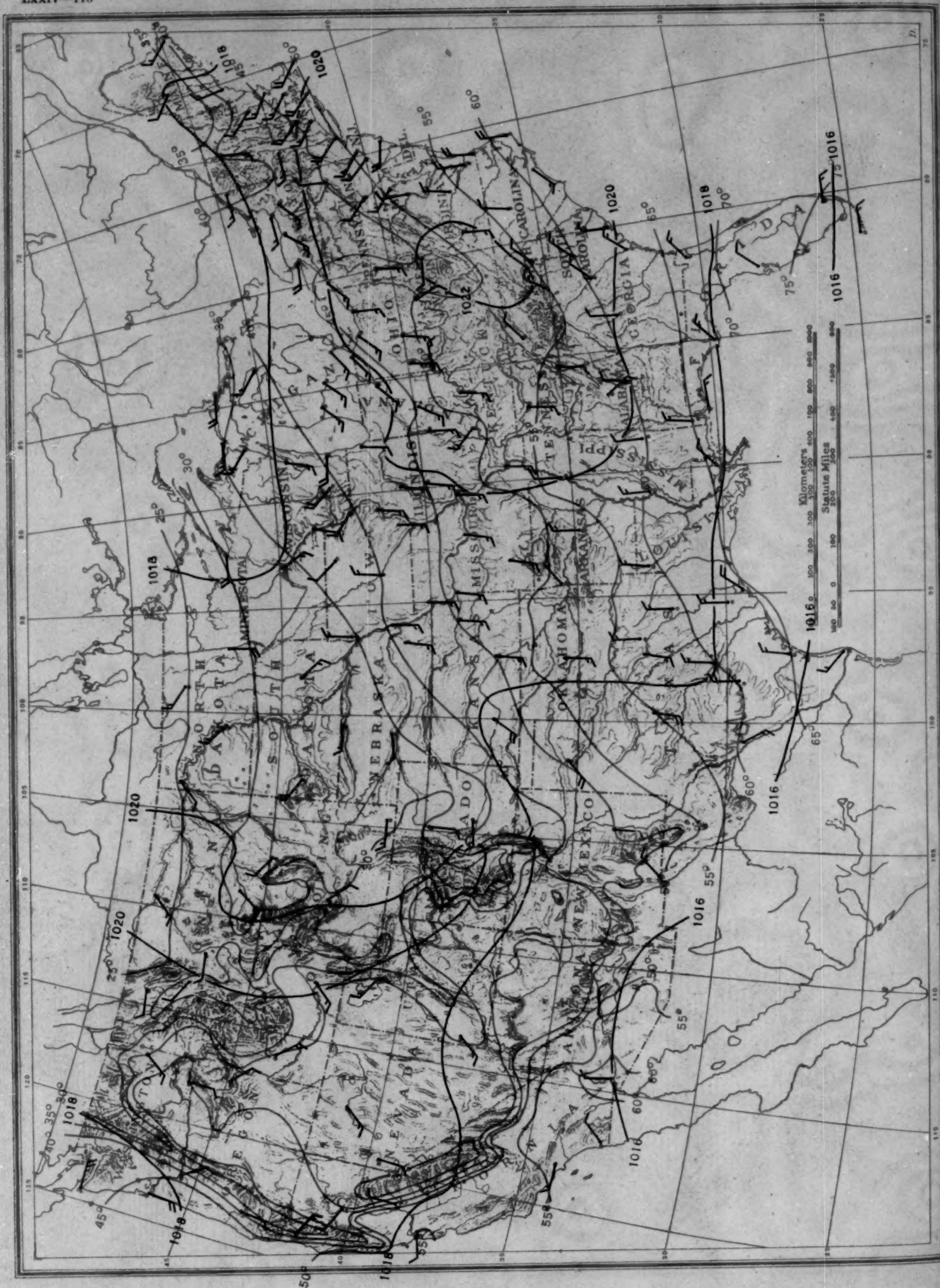
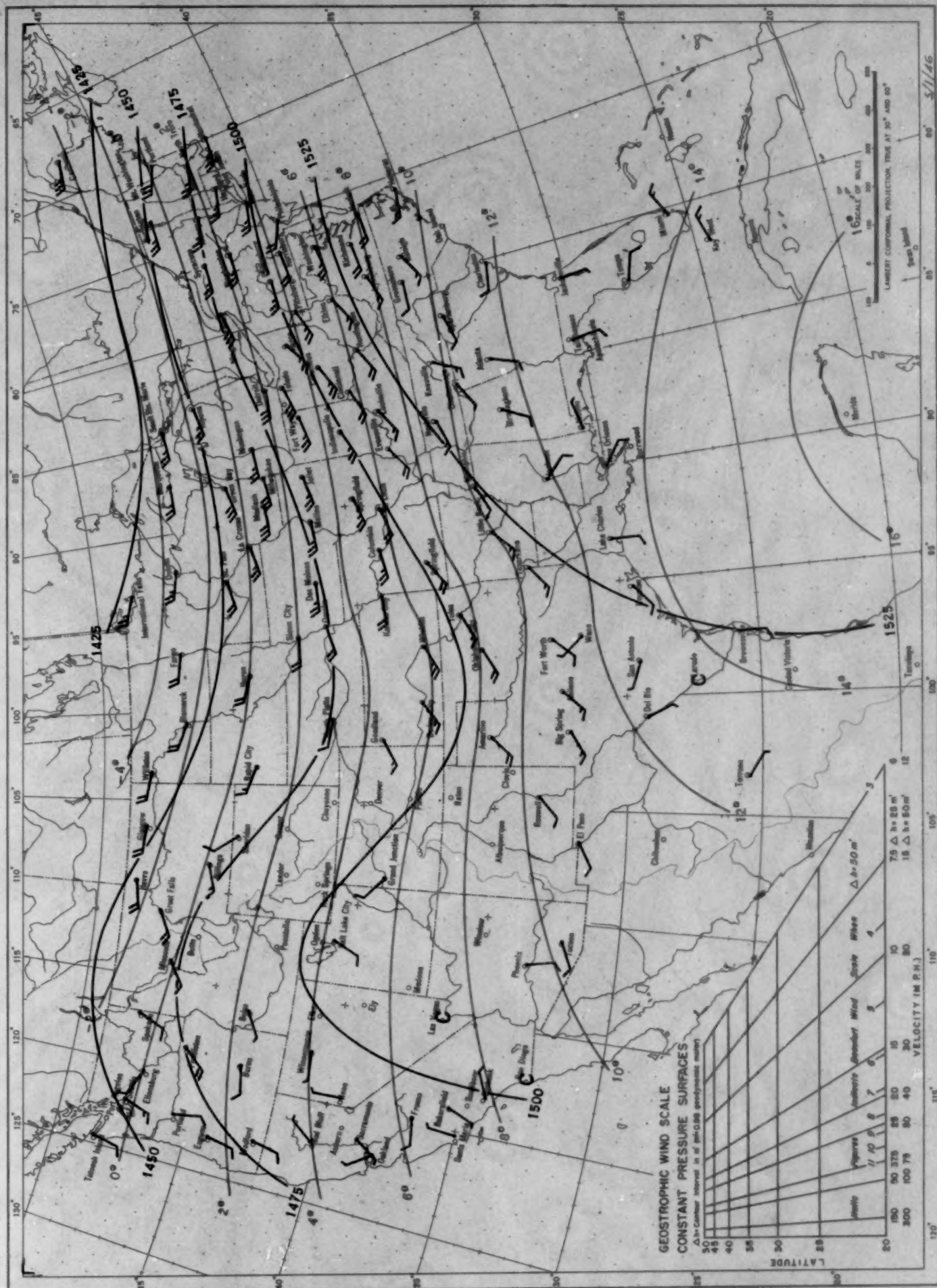
Chart VI. Isobars (mb.), at Sea Level and Isotherms ($^{\circ}\text{F}$.) at Surface; Prevailing Winds, November 1946

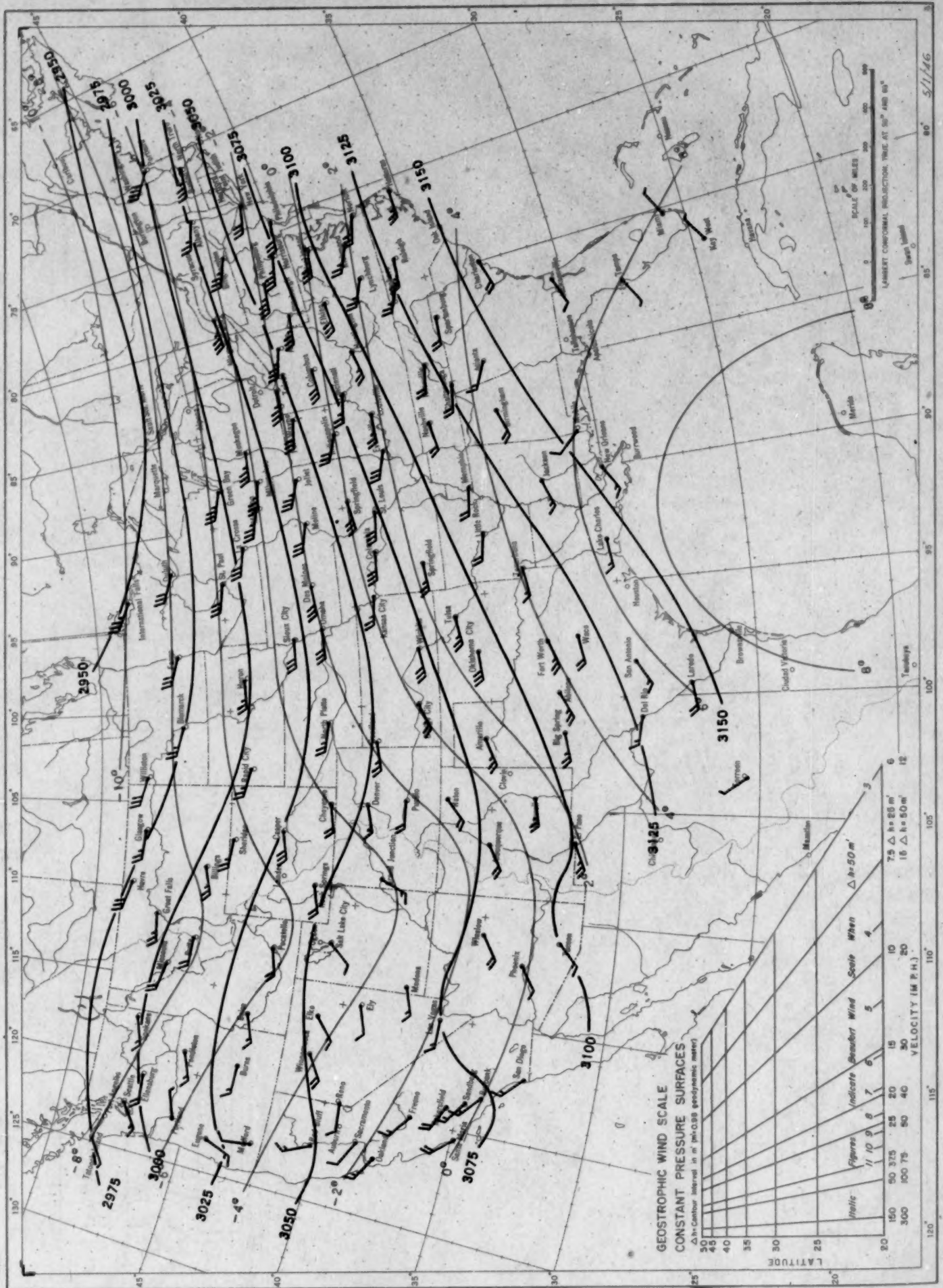
Chart VII. Total Snowfall Inches, November 1946.

Chart VIII, November 1946. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meter and Isotherms in Degrees Centigrade for the 850-millibar Pressure Surface, and Resultant Winds at 1,500 Meters (m.s.l.)



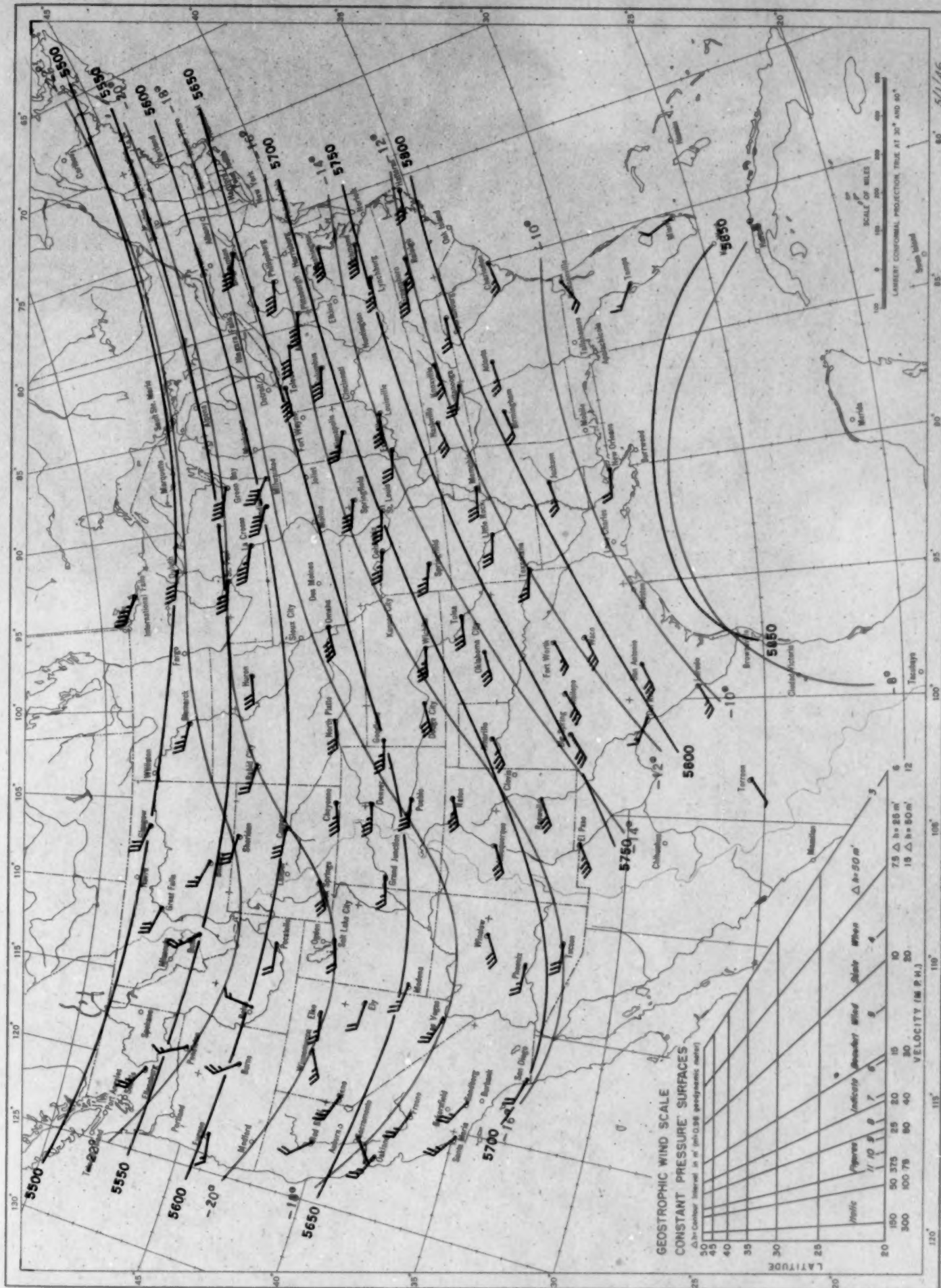
Contour lines and isotherms based on radiosonde observations at 0300 G.C.T., and winds based on pilot balloon observations at 2200 G.C.T.

Chart IX, November 1946. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meter and Isotherms in Degrees Centigrade for the 700-millibar Pressure Surface, and Resultant Winds at 3,000 Meters (m.s.l.)



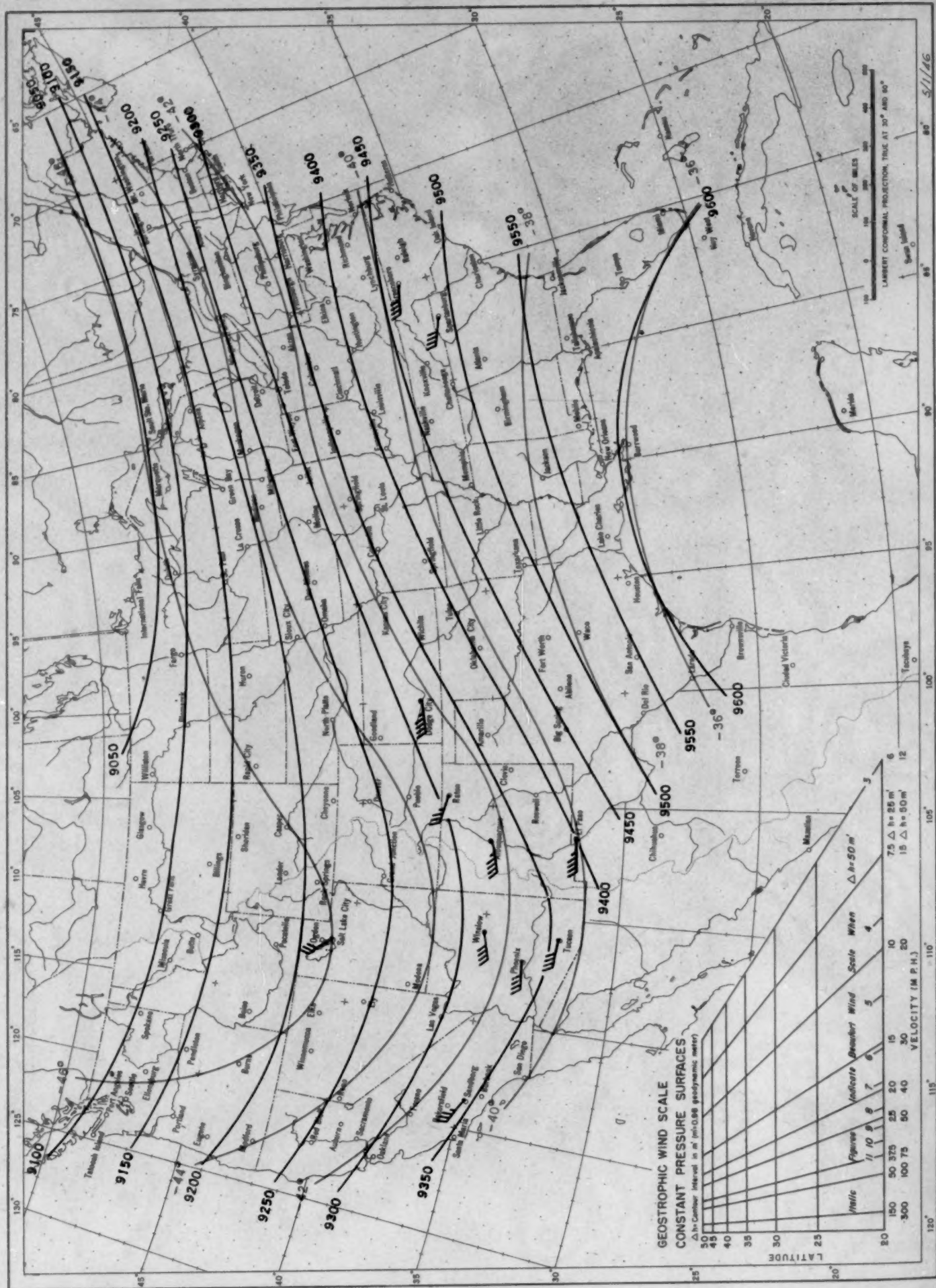
Contour lines and isotherms based on radiosonde observations at 0300 G.C.T., and winds based on pilot balloon observations at 2200 G.C.T.

Chart X, November 1946. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meter and Isotherms in Degrees Centigrade for the 500-millibar Pressure Surface, and Resultant Winds at 5,000 Meters (m.s.l.)



Contour lines and isotherms based on radiosonde observations at 0300 G.C.T., and winds based on pilot balloon observations at 2200 G.C.T.

Chart XI, November 1946. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meter and Isotherms in Degrees Centigrade for the 300-millibar Pressure Surface, and Resultant Winds at 10,000 Meters (m.s.l.)



Contour lines and isotherms based on radiosonde observations at 0300 G.C.T., and winds based on pilot balloon observations at 2200 G.C.T.